Exhibit 2

Exhibit 2 U.S. Patent No. 7,848,900 ("'900 Patent")

Accused Products/Instrumentalities: Resideo's smart thermostats (e.g., Resideo T5 Pro Smart Thermostat, Resideo T6 Pro Smart Thermostat, Resideo T9 Smart Thermostat, Resideo T10 Pro Smart Thermostat, WiFi Color Touchscreen Thermostat, WiFi Programmable Smart Thermostat, The Round Smart Thermostat, WiFi 9000 Color Touchscreen Thermostat), Resideo's backend servers, backend-supported software features or services (e.g., Resideo Energy Care, Resideo Cloud Technology, Connected Savings, energy programs/features) online interfaces, and mobile applications (e.g., Honeywell Home app, Total Connect app, Resideo app—all of which may be referred to herein as "Resideo mobile app"), and all versions and variations thereof since the issuance of the asserted patent.

Asserted Claims: Claims 1-7

Claim 1

Issued Claim(s)	Public Documentation
1[pre]. A system for calculating a value	To the extent the preamble is deemed limiting, the Accused Products include a system for
for an operational efficiency of an	calculating a value for an operational efficiency of an heating, ventilation, and air conditioning
heating, ventilation, and air conditioning	(HVAC) system comprising.
(HVAC) system comprising:	
	In cases involving EcoFactor, Inc. patents in the U.S. District Court for the Western District of Texas (e.g., Case No. 6:22-cv-00033-ADA) and in the U.S. District Court for the District of Delaware (e.g., Case No. 1:21-cv-00323-MN), the term "operational efficiency" was construed as "energy or time required by the HVAC system to change inside temperature by a given amount for a set of indoor and outdoor conditions."
	For example, the Accused Products include one or more Resideo-branded thermostats supported by Resideo's backend servers, related online interfaces, related accessories, and related mobile applications. The Accused Products/Instrumentalities includes features of the smart thermostats such as, but not limited to, Resideo Energy Care provided with Resideo Cloud Technology, energy features provided with Resideo cloud technology (e.g., Connected Savings, energy programs/features). The Accused Products/Instrumentalities correspond to a system for calculating a value for an operational efficiency of an heating, ventilation, and air conditioning (HVAC) system.

For example, as shown below, the Accused Products include Resideo-branded thermostat systems that allow for an evaluation of the time or energy required for an HVAC system to change the inside temperature given a set of indoor and outdoor conditions, among other features. The Resideo smart thermostat is installed, and connects to the Resideo Energy Care subscription service and Resideo Cloud Technology. See, e.g., www.resideo.com/us/en/energy-<u>care/</u> ("Resideo Energy Care – a subscription service that uses Resideo Cloud Technology to make your smart thermostat save even more energy. All for just \$9.99 a year...Energy Care pays attention to your home and how you're using it. It then creates your ideal environment to help you save energy. This is on top of the savings a standard Honeywell Home Smart Thermostat already delivers...Energy Care constantly watches the local weather forecast to make sure your home responds accordingly when we're saving energy, and when the weather heats up, your home will cool down in time to keep you comfortable. It's always prepared – even when the weather takes a sudden turn... Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature...Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."). As described by Resideo, Energy Care causes "your energy use [to] become more efficient than ever." That is because Energy Care depends on "state-of-the-art AI algorithms." The Energy Care feature calculates a value for the operational efficiency of the HVAC system, such as using the Home Thermodynamic technology which models the home and HVAC system, which learns the energy or time required by the HVAC system to change inside temperatures in response to outside temperatures. This permits Energy Care to make the system more energy efficient by reducing energy usage by reducing / optimizing more efficient HVAC runtimes, which directly reduces the energy consumed by the HVAC system and/or the energy costs. Energy Care not only runs the HVAC system at more efficient temperatures but also uses the thermodynamic model and weather data to calculate efficient setpoints that result in efficient usage given that specific home and HVAC system (e.g., pre-heating, heating, pre-cooling, or cooling an efficient amount, instead of a wasteful amount of too much or too little). The user has

the option to select for savings or comfort. If the user selects for savings, Energy Care can deliver a more energy efficient HVAC runtime. If the user opts for comfort, Energy Care can improve user comfort in view of the efficiency of the HVAC system in terms of the time it requires to precool or preheat the structure. The values for operational efficiency calculated with the Energy Care Home Thermodynamic technology include, inter alia, the HVAC runtime required to change inside temperature by a given amount for a set of indoor and outdoor conditions (e.g., the latest indoor and outdoor temperature data received from the thermostat or the weather service, respectively). They also include, inter alia, the energy values shown in the graphs of energy consumption with and without energy care on the Energy Care website. They also include, inter alia, the HVAC energy savings metrics generated with Energy Care. Energy Care sends optimized thermostat schedules to participating thermostats each day that are based on a custom energy model of the home. The parameters of the custom energy model also correspond to "values for the operational efficiency of the HVAC system." The ongoing updating or use of the custom energy model also corresponds to calculating values for the operational efficiency of the HVAC system. The Energy Care model uses temperature and/or runtime and/or HVAC "on" / "off" status data from the connected thermostat as well as "hyperlocal weather data" to develop a custom energy model of the home to understand how it responds to varying weather conditions, and it can predict how the home will respond given an input set of indoor and outdoor temperatures. The values for the operational efficiency of the HVAC system generated with e.g. Energy Care satisfy the construction that requires inter alia "for a set of indoor and outdoor conditions." Resideo Energy Care also "recalculates settings onthe-fly if the weather develops differently than forecasted."

Energy Care optimizes operational efficiency by recommending custom pre-cool or pre-heating schedules for each home, determining the extent to which homes and HVAC systems with better insulation will have different operational efficiency than homes and HVAC systems with worse insulation. Similarly, Energy Care's custom energy model will learn about how efficient the HVAC system performs and operates in the real-world, and how that changes over time, in contrast to its theoretical efficiency.

To the extent Resideo disputes infringement, there would also be infringement under the doctrine of equivalents, because Resideo's Accused Instrumentalities perform the same function of calculating a value for the energy or time required by the HVAC system to change inside

temperature by a given amount for a set of indoor and outdoor conditions in substantially the same way, by using the Resideo Energy Care Thermodynamic model and/or custom energy model to model the thermodynamic properties of the home and HVAC system, which allows for understanding and predicting how much time the HVAC system will require to change inside temperatures in response to outside temperatures, and/or generating pre-cooling or pre-heating strategies based on the model's computed values, and/or generating energy efficiency graphs and metrics based on the energy model, which achieves substantially the same result of calculating how efficient the HVAC system is at changing inside temperatures in response to outside temperatures and optimizing efficiency by e.g. recommending customized schedules for each home.

The Accused Products include certain Resideo-branded and Honeywell Home-branded smart thermostats. The charts below may show evidence relating to the T10 or T9 as exemplary products that are representative of all of the Accused Products. In their normal and intended operation, the Accused Products constitute a thermostat system that controls the user's HVAC system. They are configured to send signals to control the user's HVAC system. The normal and intended operation of the Accused Products involves connecting them to the relays that control the HVAC system and to the Resideo cloud or backend systems, and the Accused Products are configured to receive signals from the Resideo or Honeywell Home mobile application(s) on the user's location-aware mobile device. Based on currently available information, there are no differences between different versions of Accused Product that are material for purposes of infringement of the claimed system.

Resideo directly infringes the asserted claims through the making, use, offering for sale, and sale of the Accused Products. The Resideo-branded smart thermostat, which is designed to connect to Resideo's cloud backend servers, is made by Resideo. The system is also used, offered for sale, and sold by Resideo. The Accused Products infringe "out of the box" and are configured to satisfy each element of the asserted claims. Installation of the Accused Products in the recommended manner results in the infringing thermostat system. Even before the Accused Products/Instrumentalities are actually installed, they are configured to perform each element of the asserted claims. This results in direct infringement regardless of the fact that the thermostat system is not sold in a state that is already plugged in, powered on, connected, etc.

To the extent a customer act may be deemed required to form the claimed system, Resideo still directly infringes, and also infringes pursuant to theories of inducement or contributory infringement. As an example, customers are encouraged and intended to use the Resideo mobile app(s) and the Energy Care features of the Accused Products, and such use is consistent with normal use and configuration of the Accused Products. Resideo's customers connect the Accused Products to Resideo's cloud or back-end in the ordinary use of the Accused Products, pursuant to instructions from Resideo. As another example, Resideo's customers create an account and register devices/structures with the customer's account. The Accused Products are designed to be associated with the customer's home and to connect to the customer's HVAC system. As another example, Resideo's customers are encouraged to allow their electronic devices such as a smartphone to download the Resideo app to send signals to the thermostat system. Resideo specifically instructs and encourages users to allow features such as Energy Care to operate, so that the thermostat system is designed to save energy.

Resideo induces, encourages, and provides instructions and incentives to customers to engage the features described in the charts below with respect to each charted claim, which perform the claim limitations as more fully set forth below. Further, Resideo possessed knowledge that the underlying induced acts constitute patent infringement, at least since this case commenced, and potentially earlier. Resideo specifically intended to encourage the underlying acts constituting direct infringement, e.g., which occur pursuant to use of the features described above and below. Resideo specifically intended these acts because it provided instructions to its customers explaining how to use these features, encouraged its customers to use these features, sign up for and enroll in these features.

The Accused Products are not staple goods, not suitable for substantial noninfringing use, and do form a material part of the inventions described in the claims. They infringe each element of the claim when they are installed in the United States as Google intends and according to their design. Resideo's Energy Star certificates for the Accused Products also show that the Accused Products support accused features.

The Resideo Energy Care and energy services websites explains that Resideo works with utilities around the US to provide demand response and energy efficiency programs including Resideo Energy Care, Connected Savings, Demand Response, and other energy services

involved in infringement. Some utilities pay for the Energy Care or similar service for the user, and other users are encouraged to purchase services like Energy Care for a subscription fee (e.g., \$9.99/year) from Resideo. See, e.g., T Series Thermostat Family | Resideo Pro: https://www.resideo.com/us/en/pro/solutions/t-series/ Hallway 12:30 \$83 Honeywell Home

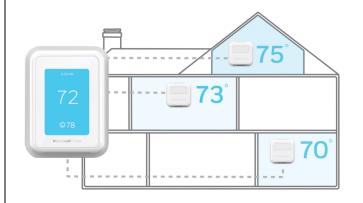


PRODUCT OVERVIEW

The T9 Smart Thermostat works with Smart Room Sensors to help you adjust the temperature from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T9 works toward creating an average temperature, balancing the needs across the whole home.

Whether it's a song belted in the shower or a whispered secret, your air goes beyond simply carrying oxygen to circulating memories. Heavy or light, hot or cold, always unique to your home, the air you feel is more than its temperature setting. Our Air products and services work with you and for you, supporting and creating more comfortable surroundings.



"THE BEST RANGE I'VE SEEN IN THIS CLASS OF PRODUCT."

Focus on multiple rooms for comfort where it matters most. Don't guess at the temperature in the bedroom from the hallway. Get the comfort you want, where you want it – to sleep, work, focus or unwind.

 $\underline{https://www.resideo.com/us/en/products/air/thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-th$

See also T10 Pro Smart Thermostat with RedLINK Room Sensor brochure:

https://digitalassets.resideo.com/damroot/Original/10004/03-

00458.pdf? ga=2.56182061.768294451.1641940625-374792558.1641940625

See also T10 Pro Smart Thermostat with RedLINK Getting Started guide: https://digitalassets.resideo.com/damroot/Original/10014/33-00424EFS.pdf?_ga=2.123077901.768294451.1641940625-374792558.1641940625

See also T10 Pro Smart Thermostat with RedLINK User Guide: https://digitalassets.resideo.com/damroot/Original/10003/33-00428.pdf? ga=2.52964526.768294451.1641940625-374792558.1641940625

See also Honeywell Home T9 Smart Thermostat with Smart Room Sensors video: https://www.youtube.com/watch?time continue=6&v=LIdFkaxqSG0&feature=emb title

Selecting system mode

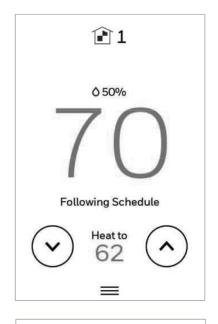
Touch homescreen to wake the thermostat.

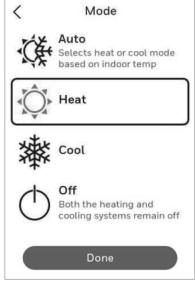
Touch the menu icon and then touch "Select Mode."

- **Heat**: Controls the heating system.
- Cool: Controls the cooling system.
- Off: Turns the heating and cooling systems off.
- **Auto**: When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat**: Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

Notes:

- All available modes may not be shown for some applications. Scroll down to see more mode options (if available).
- Auto mode may not appear on the thermostat screen or in the app depending on your equipment, and how your thermostat is configured.
- When Auto is selected, "Heat to" and "Cool to" will both be shown from the "active" home screen.
- Em Heat is only available for heat pump systems. The thermostat must also be configured to control a heat pump and an auxiliary/emergency heat stage.
- When Auto is selected, "Heat to" and "Cool to" will both be shown from the "active" home screen.





Main Menu on Thermostat

From Home Screen, press the menu icon at bottom of the display (3 horizontal lines). If this is not shown at home screen, touch screen to wake display first.

Main Menu options

System mode (Available modes vary depending on how the thermostat was configured)

- Heat
- Off
- Cool
- Auto Operation on page 9.
- Em Heat Operation on page 9.

Fan (Fan setting not available for all system types)

- Auto (Fan only runs with a call for heat or cool)
- On (fan runs continous)
- Circulate (fan runs randomly approx. 33% of the time)

Priority

If wireless indoor temperature/humidity/motion sensors are used, select which sensors are used for temperature control. You can choose active sensor (ones detecting motion) or manually select which sensors to use.

Schedule

- Create new schedule (Set a time-based schedule)
- Disable schedule
- · Reset to default schedule

NOTE: To enable geofencing, use the Honeywell Home app.

Management:

Devices & Sensors

- · View the temperature and humidity reading from Smart Room Sensors
- · Identify a Smart Room Sensor
- Add a new Smart Room Sensor
- Remove a Smart Room Sensor

Thermostat information

- Mac Address
- IP Address
- Date Code
- Build Date
- Model Number Collection Version
- Wi-Fi Bootloader Version
- Wi-Fi Application Version

Equipment Status

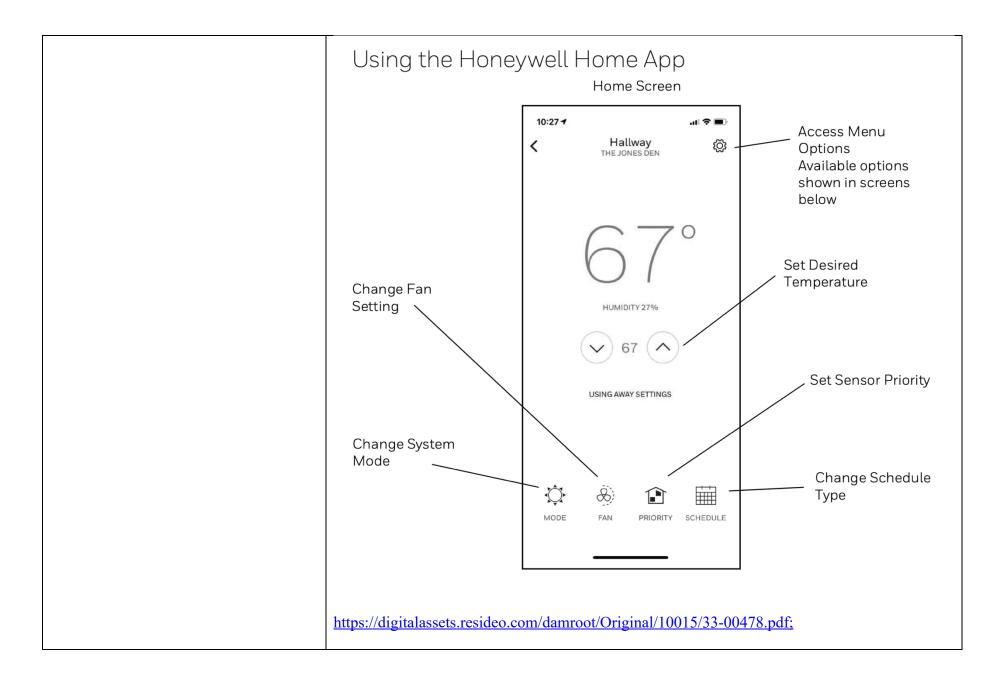
- System mode
- Heat stages (on or off)
- · Cool stages (on or off)
- Fan on or off



Configuration:

- Wi-Fi
- Connect App
- Security
- Preferences
- · Advanced Setup

Scroll down to see more options



https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/t5-smart-thermostat-without-c-wire-adapter-rcht8610wf2006-u/ (T5 product webpage);

https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/t6-pro-smart-thermostat-multi-stage-3-heat-2-cool-th6320wf2003-u/ (T6 product webpage);

https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/t9-smart-thermostat-with-sensor-rcht9610wfsw2003-u/ (T9 product webpage);

https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/t10-prosmart-thermostat-with-redlinkr-room-sensor-thx321wfs2001w-u/ (T10 product webpage);

https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/wifi-color-touchscreen-thermostat-rth9585wf1004-u/ (WiFi Color Touchscreen Thermostat product webpage);

https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/wi-fi-programmable-smart-thermostat-rth9580wf1005-u1/ (WiFi Programmable Smart Thermostat product webpage);

https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/the-round-smart-thermostat-rch9310wf5003-u/ (The Round Smart Thermostat product webpage);

https://www.honeywellhome.com/us/en/products/air/thermostats/wifi-thermostats/wifi-9000-color-touchscreen-thermostat-th9320wf5003-u/ (WiFi 9000 Color Touchscreen Thermostat product webpage);

 $\underline{https://www.energystar.gov/productfinder/product/certified-connected-\underline{thermostats/results?formId=7672588-400-404-04-}$

32249611&scrollTo=1137&search_text=&ct_device_brand_name_isopen=0&brand_name_isopen=0&low_price=&high_price=&ct_device_communication_method_isopen=0&markets_filter=United+States&zip_code_filter=&product_types=Select+a+Product+Category&sort_by=low_price&sort_direction=asc¤tZipCode=90025&compare=2344268&compare=2344267&pa

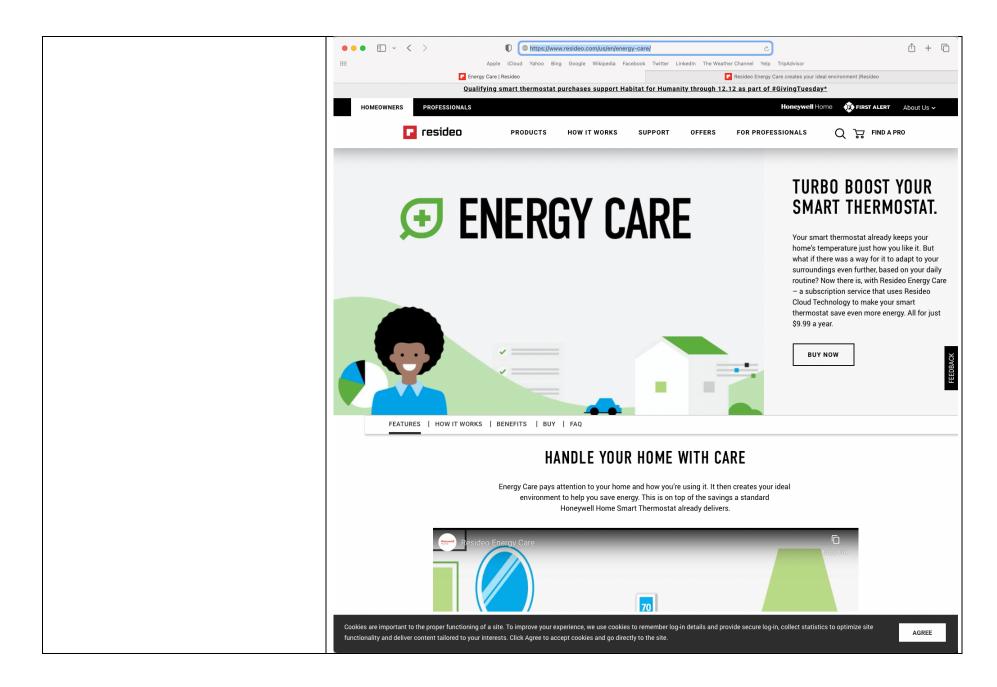
Case 6:23-cv-00061 Document 1-2 Filed 01/31/23 Page 14 of 101

ge_number=0&lastpage=0&ct_device_brand_name_filter=Honeywell&ct_device_brand_name_filter=Honeywell+Home (linking to Energy Star certification information for Resideo thermostat systems);
See, e.g., T Series Comparison Chart, available at https://digitalassets.resideo.com/damroot/Original/10014/03-00306.pdf :

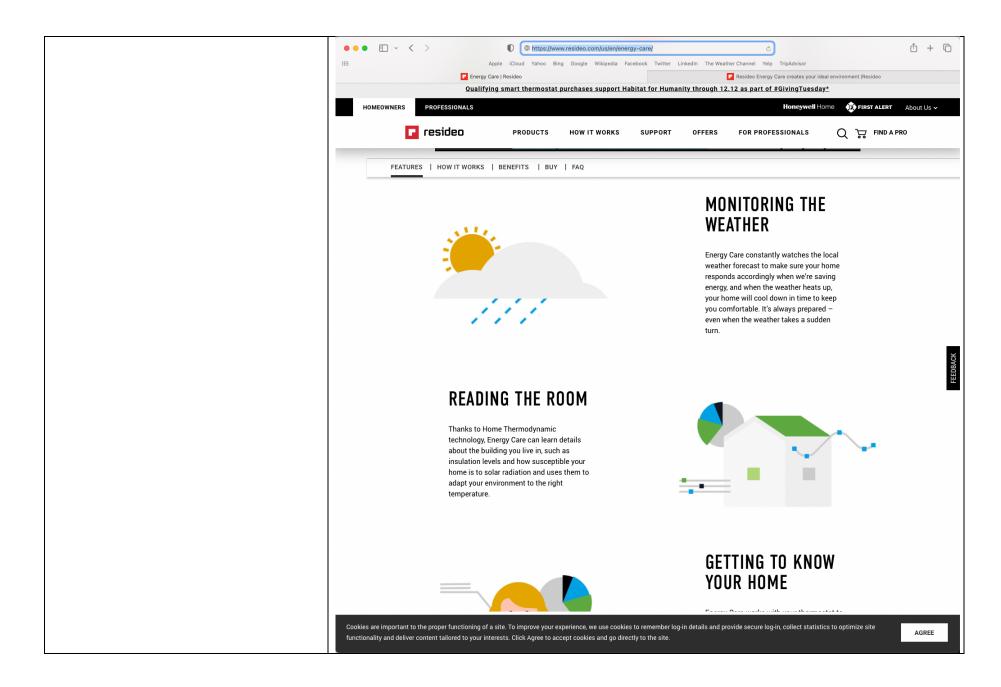
hermostat	Thermostat name	Program options	Power method	Display size	Stages	Dual fuel	Ventilation with ERV/HRV or damper	Wired indoor/ outdoor sensors	Service reminders
72	T10 Pro Smart with RedLINK® Room Sensor THX321WFS2001W RedLINK® Room Sensor (2-pack) C7189R2002-2	Geofencing, 7-day, 5-2,5-1-1, 1 or non-programmable	C-wire anly	7.27 sq. in.	3H/2C Heat Pump+ 2H/2C Corwentional	Yes	Yes* "Withhumidifier, dehumidifier, or wentilator capabilities	Yes	Yas
72	T10 Pro Smart THX321WF2003W	Geofencing, 7-day, 5-2, 5-1-1, 1 or non-programmable	C-wire anly	7.27 sq. in.	3H/2C Heat Pump + 2H/2C Corwentional	Yes	Yes* "Withhumidifier, dehumidifier, or ventilator capabilities	Yes	Yes
3	T6 Pro Smart TH6320WF2003	Geofencing, 7-day, 5-2, 5-1-1 or non-programmable	C-wire anly	6.89 sq. in.	3HV2C Heat Pump+ 2HV2C Corwentional	Yes	Yes	Yes	Yes
	T6 Pro Smart TH6220WF2006	Geofencing, 7-day, 5-2, 5-1-1 or non-programmable	C-wire anly	6.89 sq. in.	2H/1C Heat Pump+ 2H/2C Corwentional	No	No	Yes	Yes
5.	T6 Pro Z-Wave'* TH6320ZW2003	7-day, 5-2, 5-1-1, non-programmable or occupancy controlled	Battery or C-wire	6.89 sq. in.	3H/2C Heat Pump+ 2H/2C Corwentional	Yes	No	Yes	Yes
3)	TG Pro Hydronic TH6100AF2004	7-day, 5 2, 5 1 1 or non-programmable	Battery or C-wire	5,44 sq. in.	1 Stage Hot Water Heat Only – No Fan	No	No	Yes	No
.E.	T6 Pro TH6320U2008	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	5,44 sq. in.	3H/2C Heat Pump+ 2H/2C Corwentional	Yes	No	Yes	Limited
- ½-	T6 Pro TH6220U2000	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	5.44 sq. in.	2H/1C Heat Pump + 2H/2C Corwentional	Yes	No	Yes	Limited
-12-	T6 Pro TH6210U2001	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	5.44 sq. in.	2H/1C Heat Pump + 1H/1C Conventional	No	No	No	Limited
該	T4 Pro TH4210U2002	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	3.93 sq. in.	2HV1C Heat Pump+ 1HV1C Corwentional	No	No	No	Limited
2	T4 Pro TH4110U2005	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	3.93 sq. in.	1HV1C Heat Pump+ 1HV1C Corwentional	No	No	No	Limited
2	T3 Pro TH3210U2004	Non-programmable	Rattery or C-wire	3.32 sq. in.	2H/1C Heat Pumps + 1H/1C Corwentional Systems	No	No	No	No
3	T3 Pro TH3110U2008	Non-programmeble	Battery or C-wire	3.32 sq. in.	1H/1C Heat Pumps + 1H/1C Corwentional Systems	No	No	No	No
72	T1 Pro TH1110D2009	Non-programmable	Battery or C-wire	2.37 sq. in.	1H/1C Corwentional or 1H/1C Heat Pump	No	No	No	No
79	T1 Pro TH1010D2000	Non-programmable	Battery or C-wire	2.37 sq.in.	1 stage heat-only or cool-only	Noi	No	No	No

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See, e.g., T6 Pro, T10 Pro brochures and data sheets.
As another example, see, e.g., Energy Care home page snapshots, https://www.resideo.com/us/en/energy-care/ :

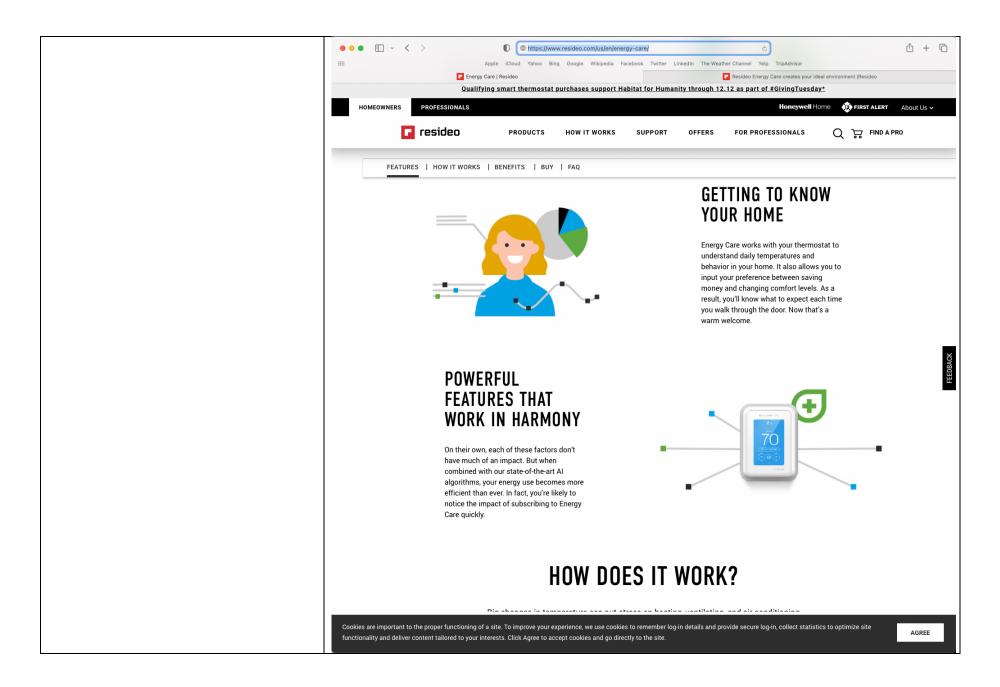


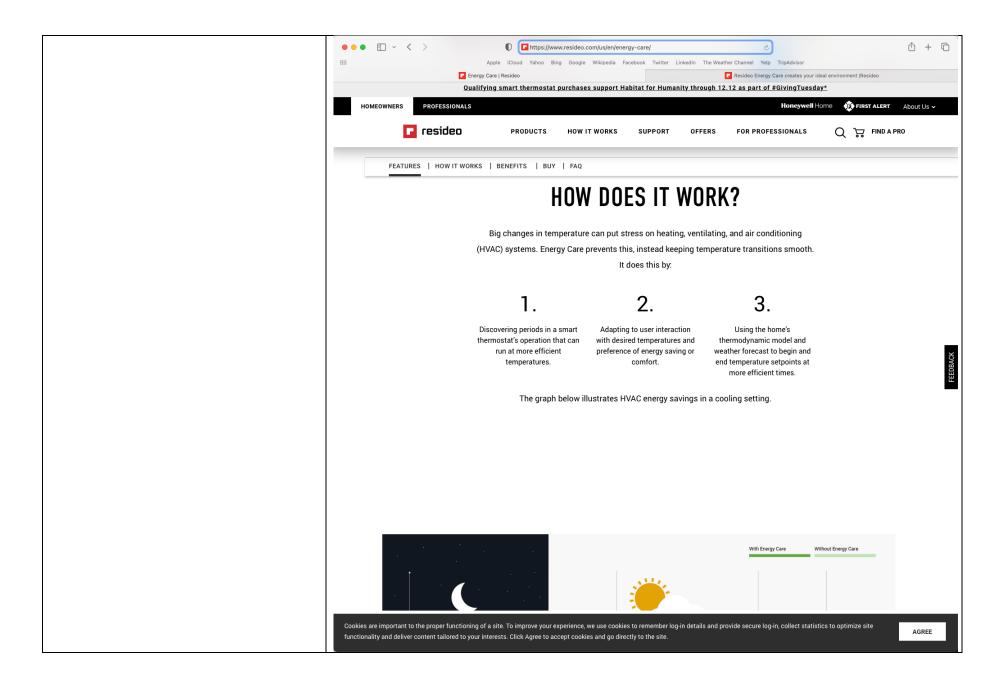
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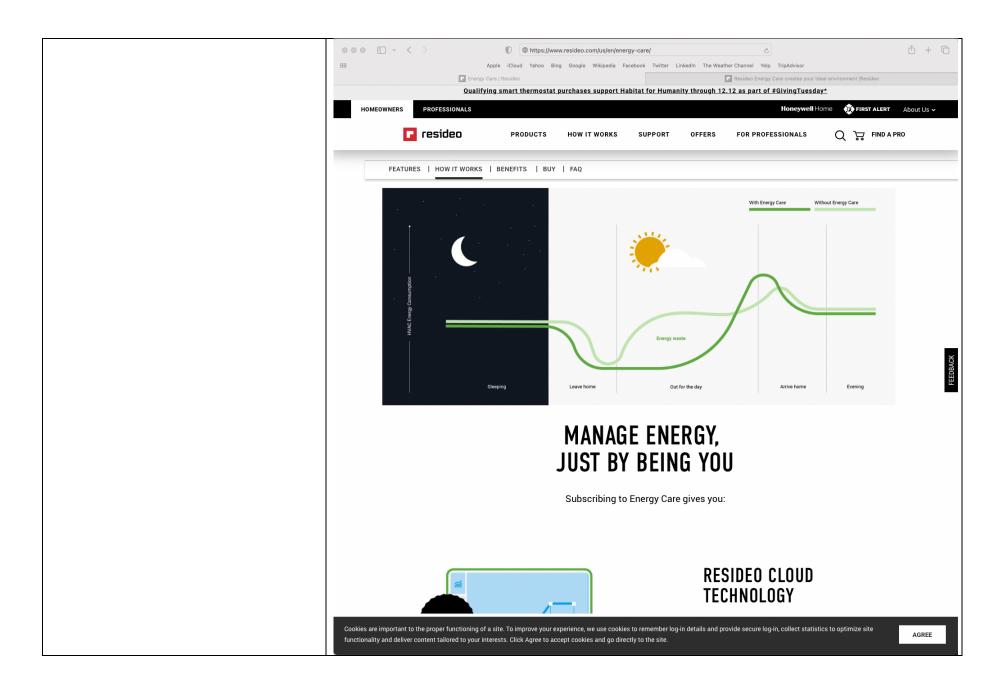


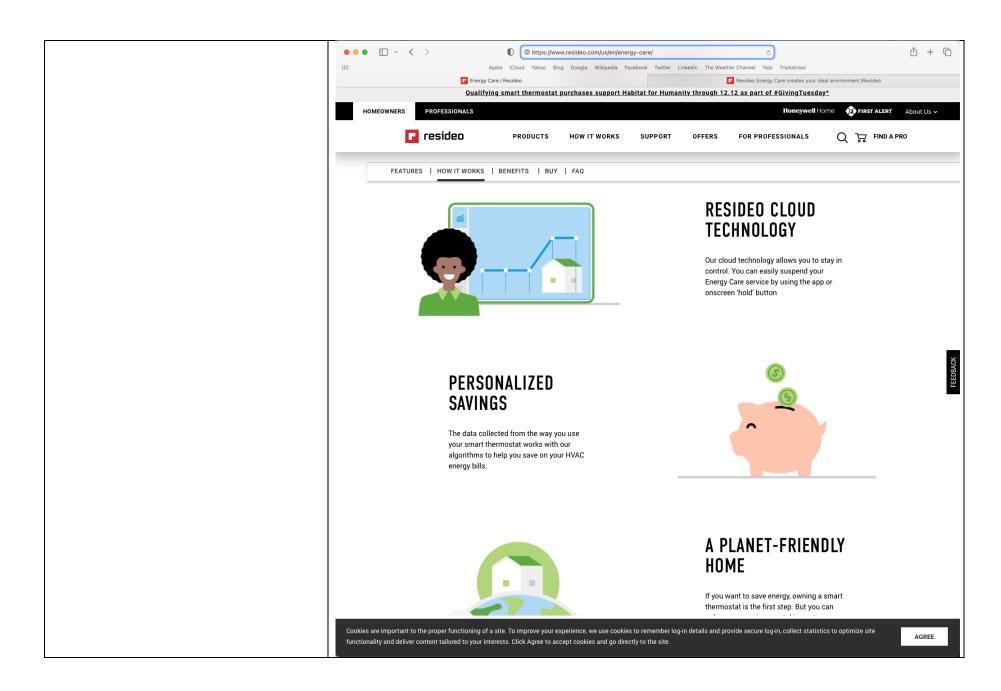
Case 6:23-cv-00061 Document 1-2 Filed 01/31/23 Page 20 of 101

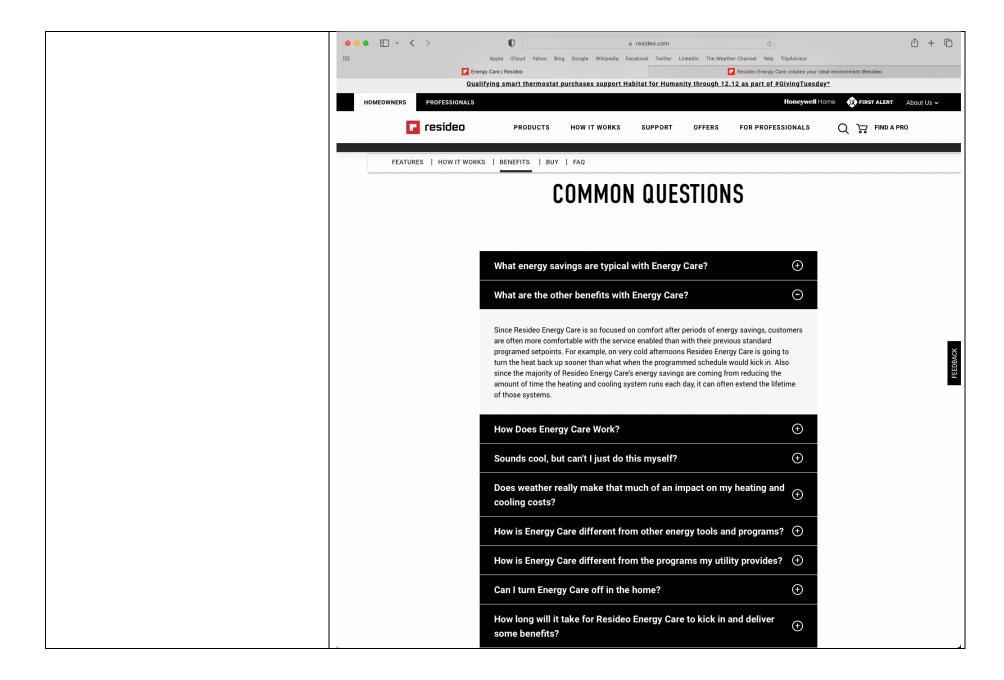
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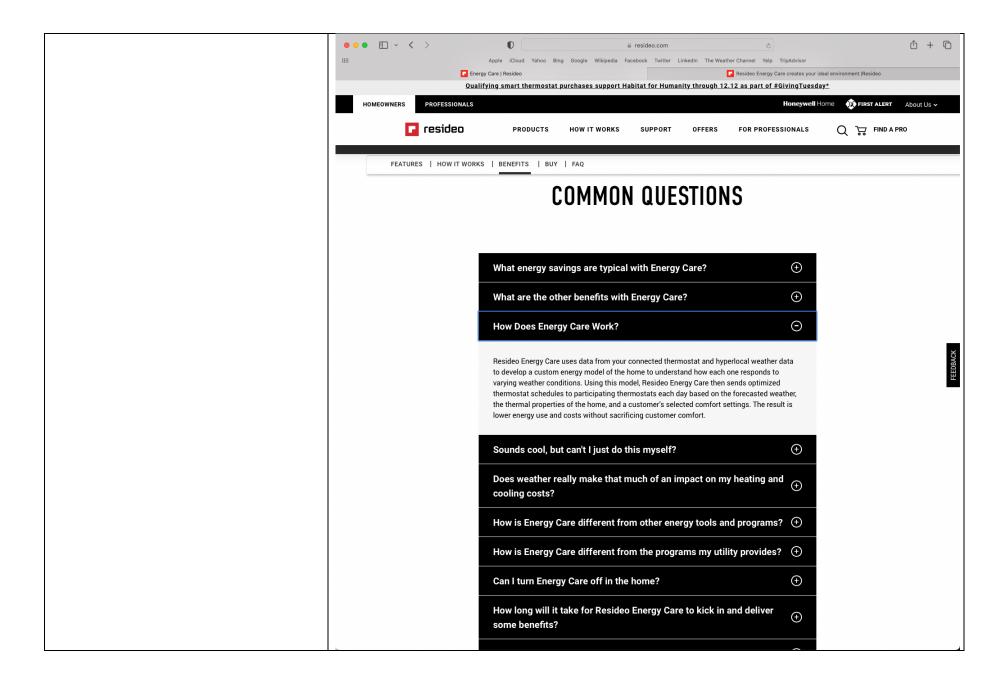


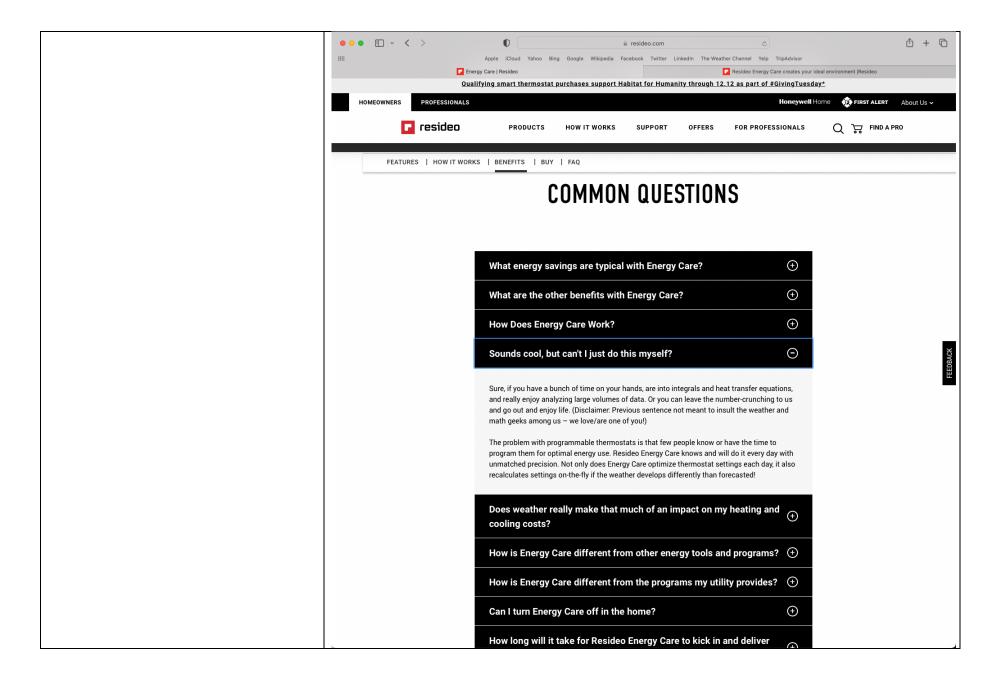


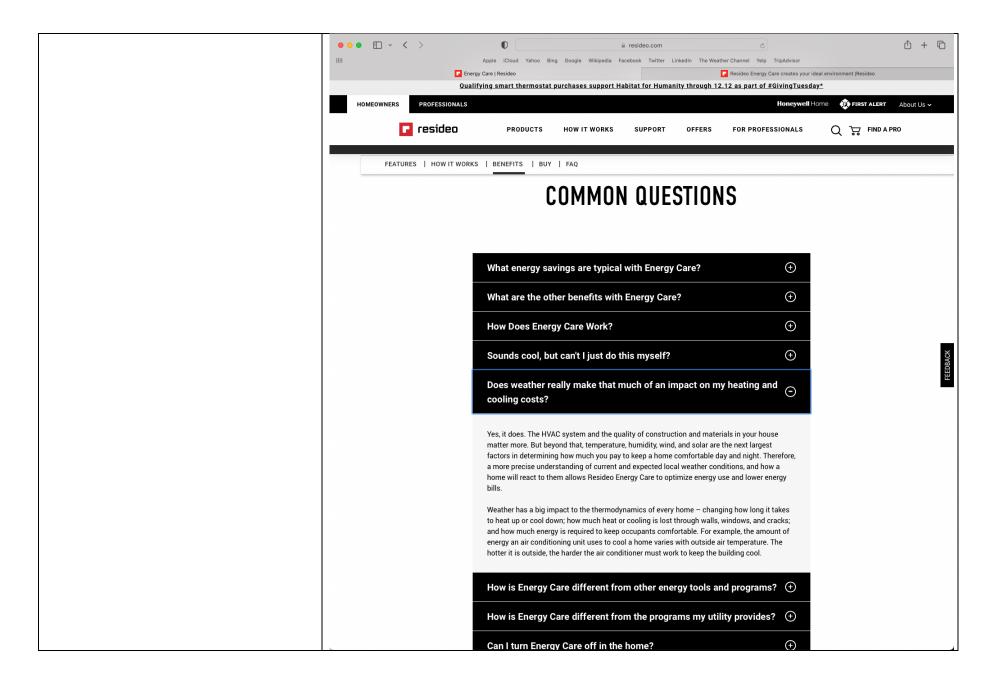


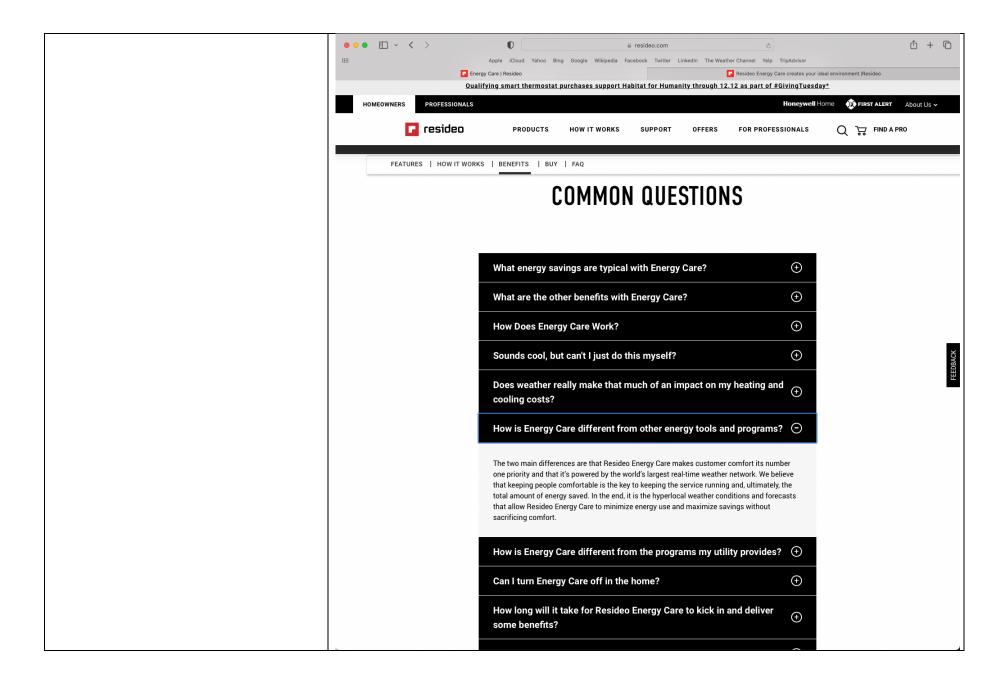


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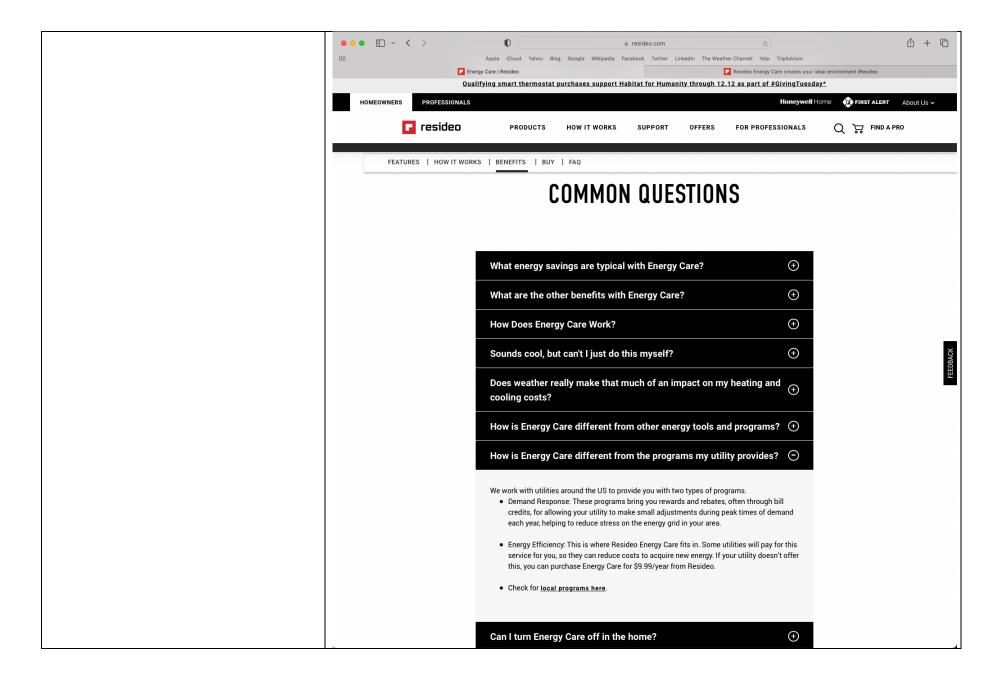








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1[a] at least one HVAC control system that receives temperature measurements from at least a first location conditioned by at least one HVAC system, and receives status of said HVAC system;

The Accused Products/Instrumentalities at least one HVAC control system that receives temperature measurements from at least a first location conditioned by at least one HVAC system, and receives status of said HVAC system. See 1[pre] and additional evidence/explanation cited therein.

For example, the "at least one HVAC control system" can correspond to the Resideo thermostat (which sends control signals over relays to turn on or off the HVAC), alone or in combination with the Resideo cloud servers that additionally control the HVAC system by sending control signals to the HVAC system via the connected thermostat. The Resideo cloud servers that send control signals to the thermostat (e.g., control settings from the Energy Care feature) also correspond to "at least one HVAC control system," alone or in combination with the thermostat.

See, e.g., https://www.resideo.com/us/en/pro/solutions/t-series/



Temperature Control



Temperature Awareness (Temperature in multiple rooms)



Temperature Prioritization (Based on motion)



RedLINK Functionality



Access from Anywhere (Connection with Resideo App)



Temperature Alerts (When rooms are too cold)

See, e.g., https://www.resideo.com/us/en/pro/products/air/thermostats/wifi-thermostats/t10-prosmart-thermostats-with-redlinkr-room-sensor-thx321wfs2001w-u/ (Product Features includes "Internet weather" and "indoor temperature, humidity and motion sensors" and "heat and cool" with support for multiple heat/cool stages") ("location-based temperature control").

The Resideo- or Honeywell Home-branded thermostat receives temperature measurements from the home where it is installed (using the "indoor temperature" sensor that each thermostat includes, *see id.* for exemplary description for a T10 model), which is a home that is conditioned by an HVAC system where the thermostat is installed. The thermostat receives the temperature

measurements using, e.g., a "temperature sensor" (*see id.*), alone or in combination with a compensation algorithm or other error correction algorithm to improve the accuracy of the sensor reading to report a more accurate inside ambient temperature measurement, in degrees of either Fahrenheit or Celsius. Even if the inside temperature measurement process involves some processing, compensation, averaging, or error correction in addition to a raw sensor reading, that is still literally receiving temperature measurements from at least a first location as required by the claim language. It would also be infringing under the doctrine of equivalents, by performing substantially the same function (HVAC control system that receives temperature measurements from at least a first location) in substantially the same way (a thermostat in the home is installed that obtains inside temperatures in degrees and reports the inside temperatures as the measure of the indoor ambient air temperature, using one or more thermistors or temperature sensors or other temperature measuring tool(s), and/or processing, normalizing, compensating, or error correcting such that a more accurate inside temperature is reported using the measuring tool(s)) to achieve substantially the same result (a system for controlling the HVAC system in the user's home receives values for the indoor ambient temperature in degrees).

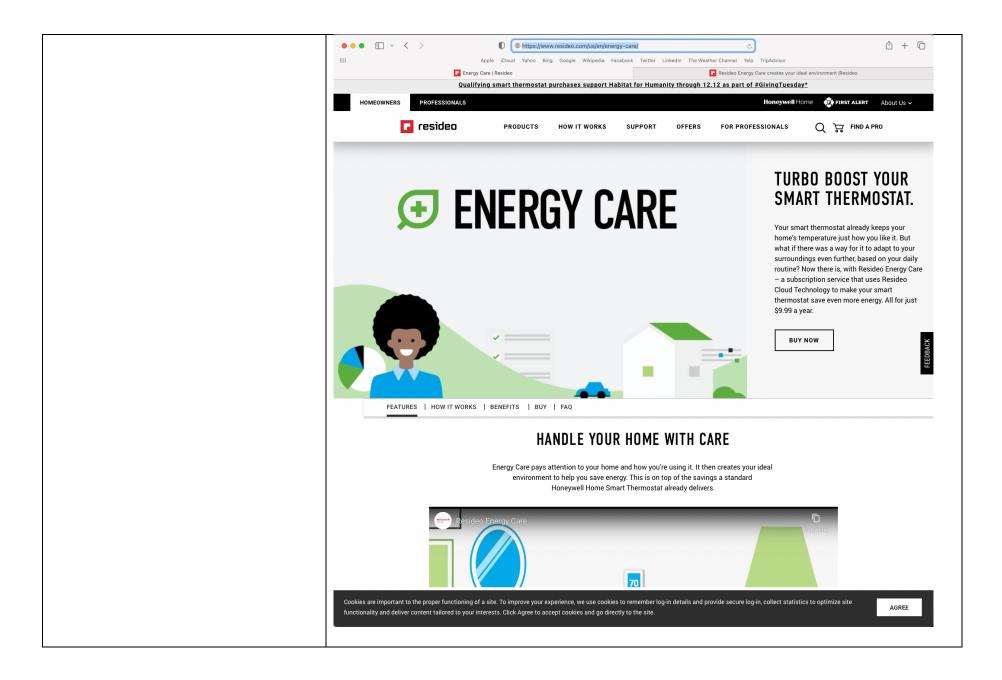
As another example, Resideo Energy Care cloud system receives inside temperature measurements from a first location conditioned by an HVAC system, which corresponds to receiving the inside temperature data uploaded from the location of the user's home where the thermostat is installed, and which is the source of the home inside temperature data used for Energy Care. This is another example of at least one HVAC control system "receiving temperature measurements" as recited in the claim.

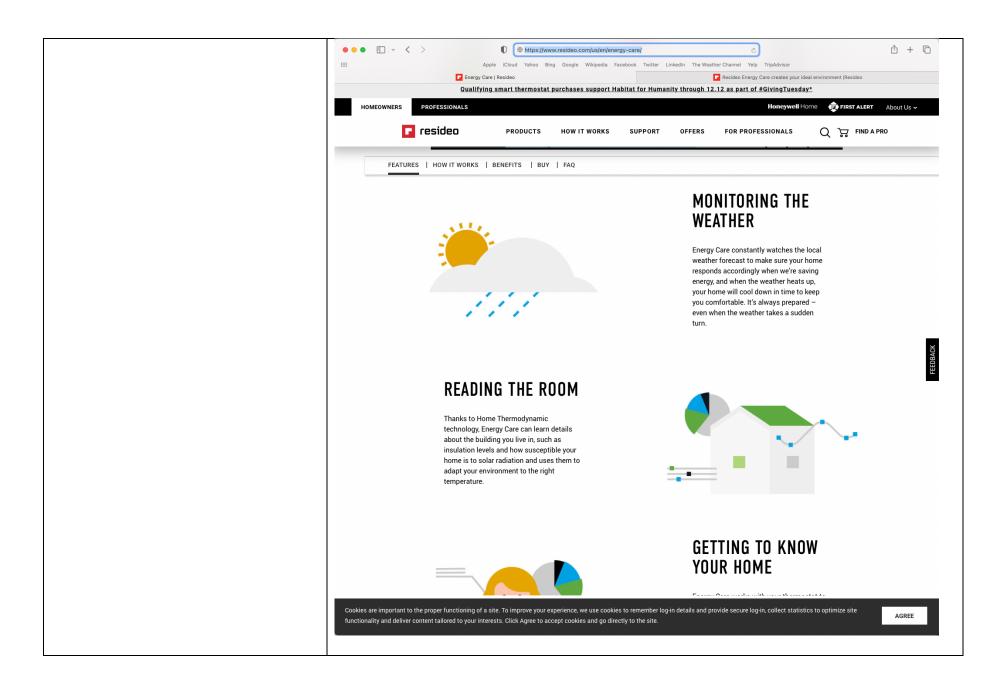
Each of the thermostat and the Resideo Energy Care cloud system also receive the status of the HVAC system, e.g., whether and when the HVAC system is heating or cooling the structure, HVAC runtime, HVAC stage of heating or cooling, etc. For example, the thermostat processor obtains data indicative of the status of the HVAC system being "on" including the current stage of heating or cooling and when that stage begins and ends and/or the runtime of each respective stage of heating or cooling, as well as data indicating when the HVAC system status is "off" and there is no active heating or cooling, and this data received by the thermostat processor is also uploaded to and received with the Resideo cloud processors. The HVAC status information is analyzed, *inter alia*, e.g., for the Energy Care feature. See, e.g., www.resideo.com/us/en/energy-care/.

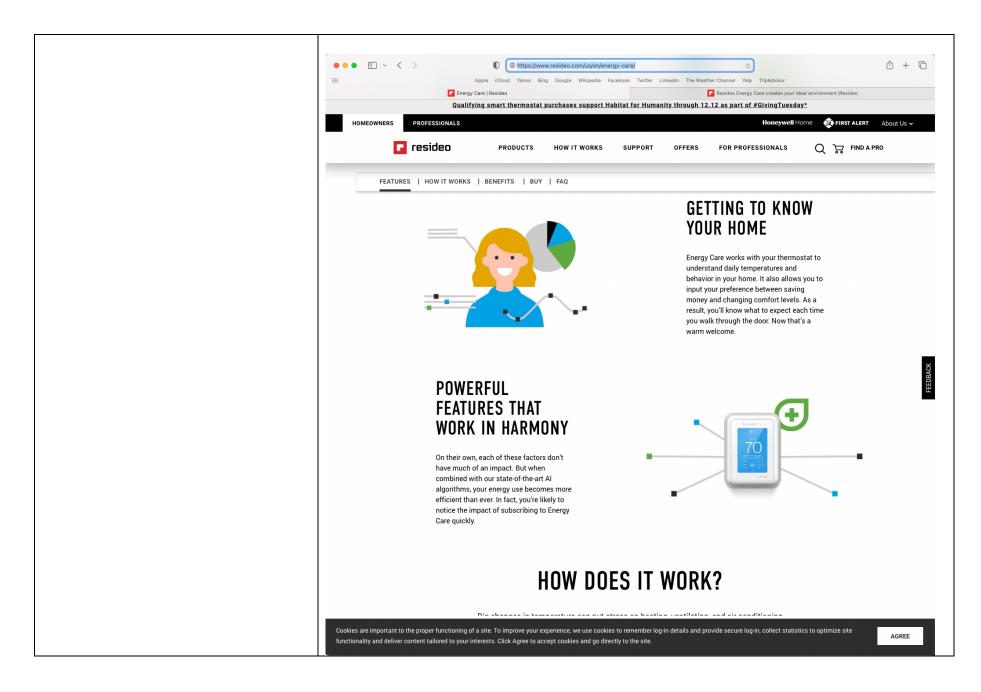
For example, the Accused Products/Instrumentalities includes one or more HVAC control systems corresponding to the thermostat alone, Resideo Cloud Technology server(s) used for Energy Care alone, or the combination of the thermostat and the cloud servers. The control system can correspond to the thermostat alone or in combination with the Resideo cloud server technology, or only the Resideo cloud server technology. Each of these receives inside temperature data from the home over time. The thermostat receives the inside temperature data from the home, and the Resideo Cloud servers receive the inside temperature data from the connected thermostat and uses it for the Energy Care Home Thermodynamic technology and the energy model trained and used for Energy Care, which sends optimized thermostat schedules to participating thermostats which controls the HVAC system, based on receiving inside temperature data and HVAC status data from the connected thermostat. See, e.g., www.resideo.com/us/en/energy-care/ (Energy Care "uses data from your connected thermostat and hyperlocal weather data to develop a custom energy model of the home to understand how each one responds to varying weather conditions. Using this model, Resideo Energy Care then sends optimized thermostat schedules to participating thermostats each day based on the forecasted weather, the thermal properties of the home, and a customer's selected comfort settings. The result is lower energy use and costs without sacrificing customer comfort." Further, Energy Care makes sure that "when the weather heats up, your home will cool down in time to keep you comfortable."); ("Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature... Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."); (Energy Care can not only use "integrals and heat transfer equations," "analyzing large volumes of data," to develop a "more precise understanding of current and expected local weather conditions, and how a home will react to them," not only to "optimize thermostat settings each day" but also "recalculates settings on-the-fly"); (Energy Care calculates "how long it takes to heat up or cool down; how much heat or cooling is lost through walls, windows, and cracks; and how much energy is required to keep occupants comfortable" based on and in response to the weather.)

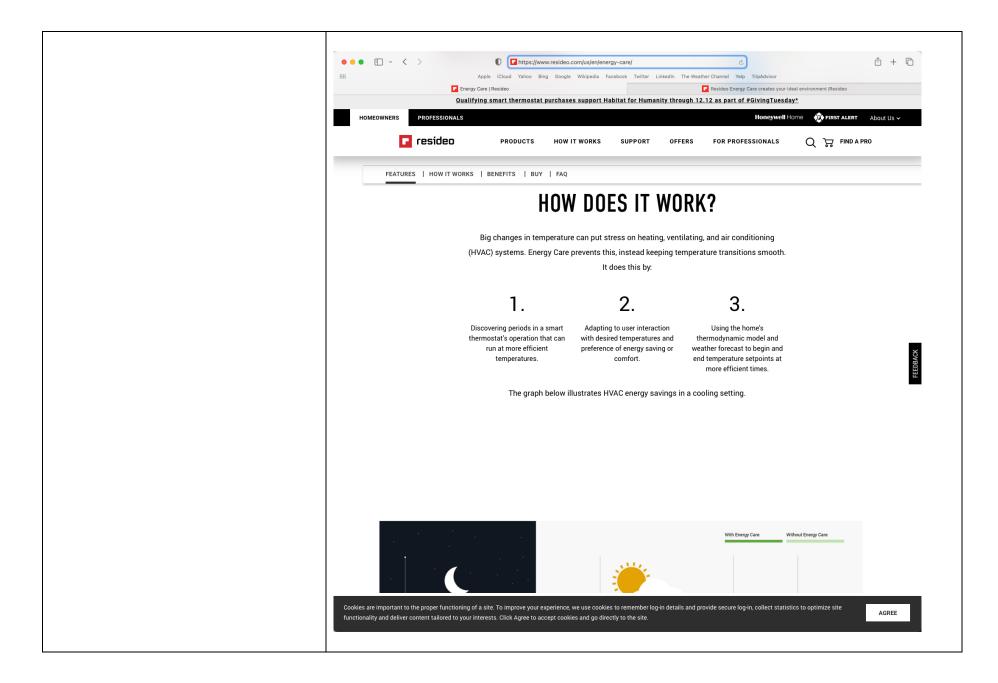
Case 6:23-cv-00061 Document 1-2 Filed 01/31/23 Page 43 of 101

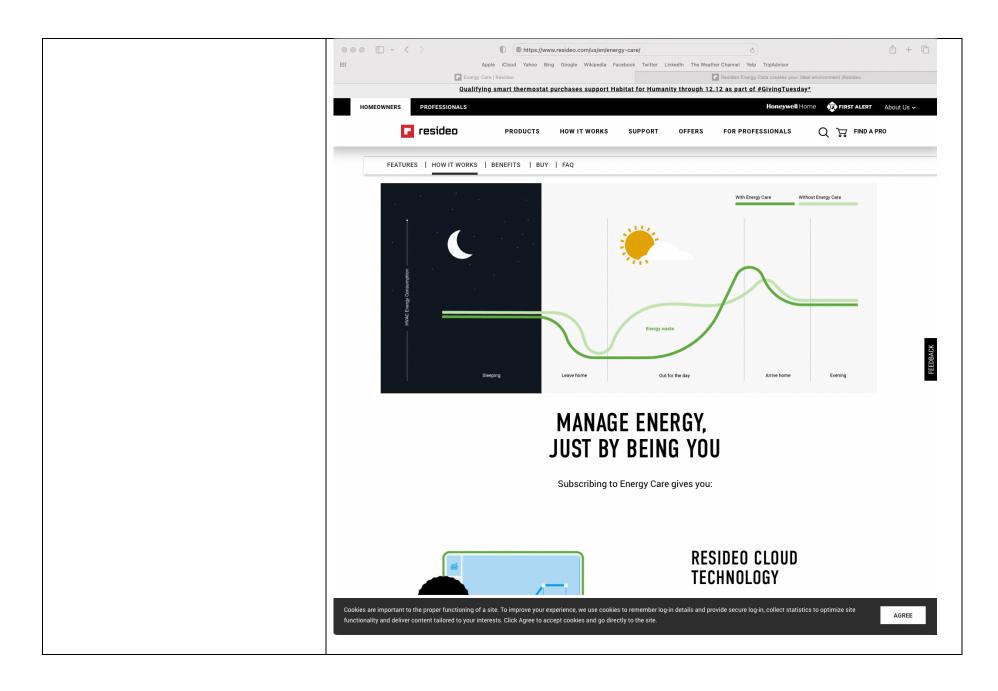
	As another example, see, e.g., Energy Care home page snapshots, https://www.resideo.com/us/en/energy-care/ :	
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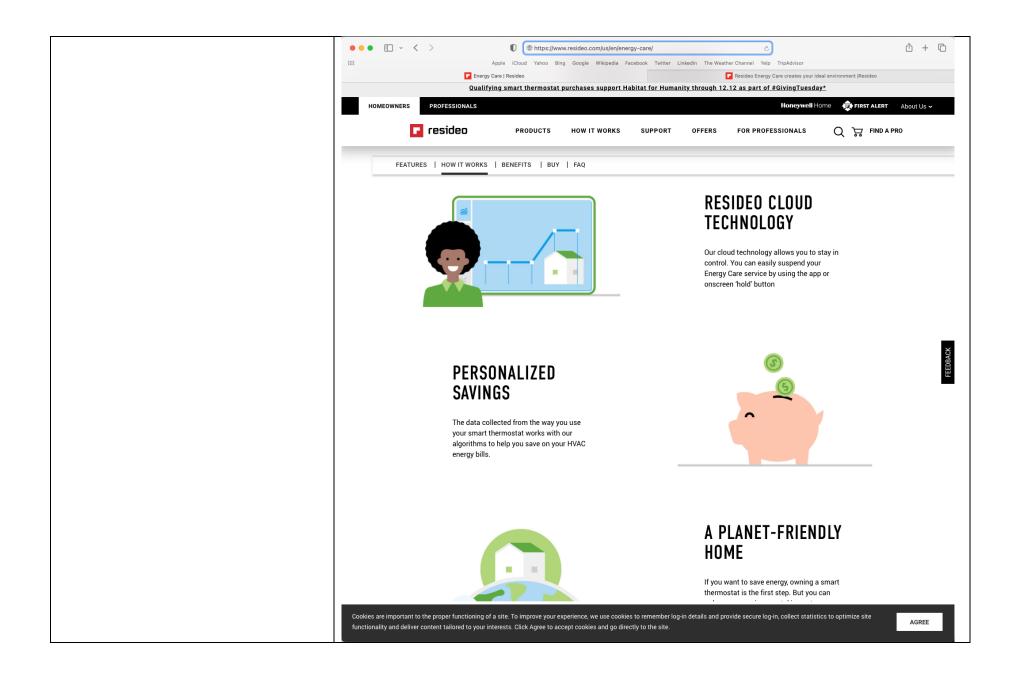


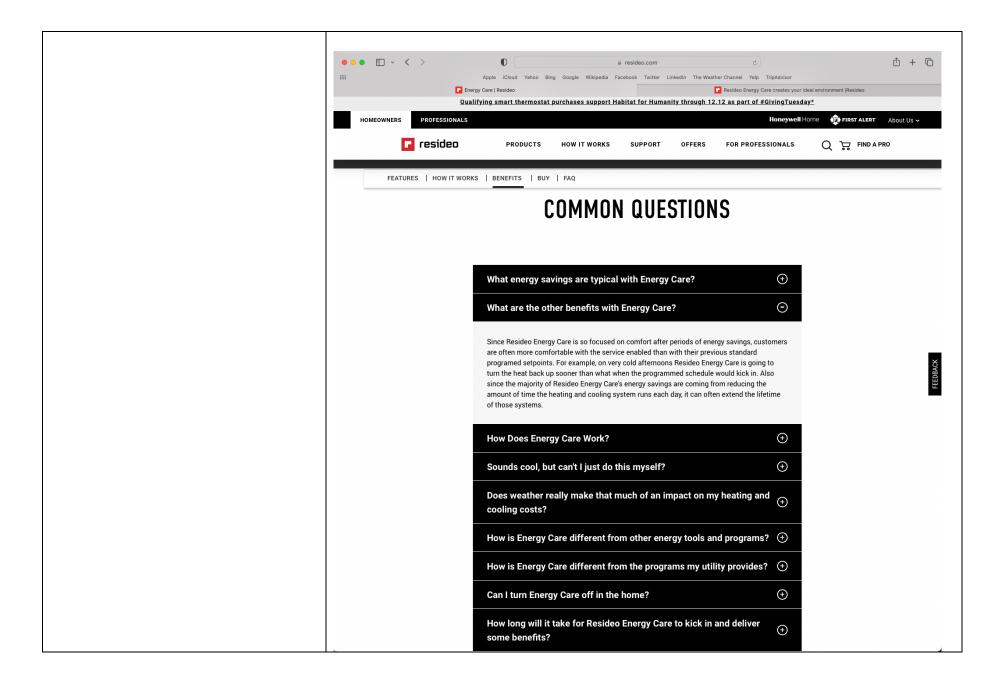


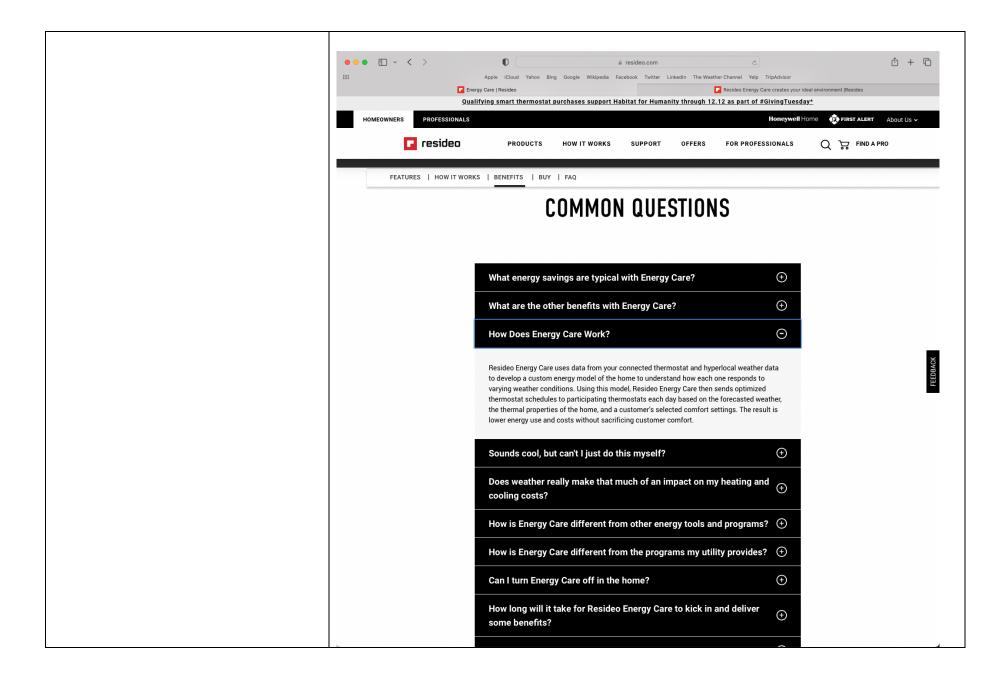


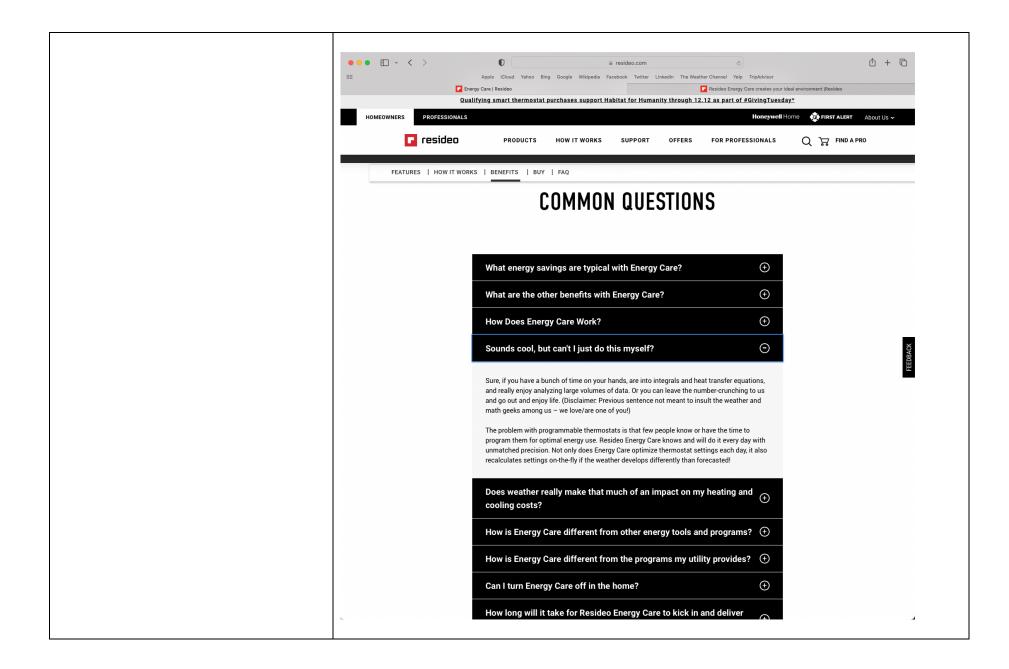


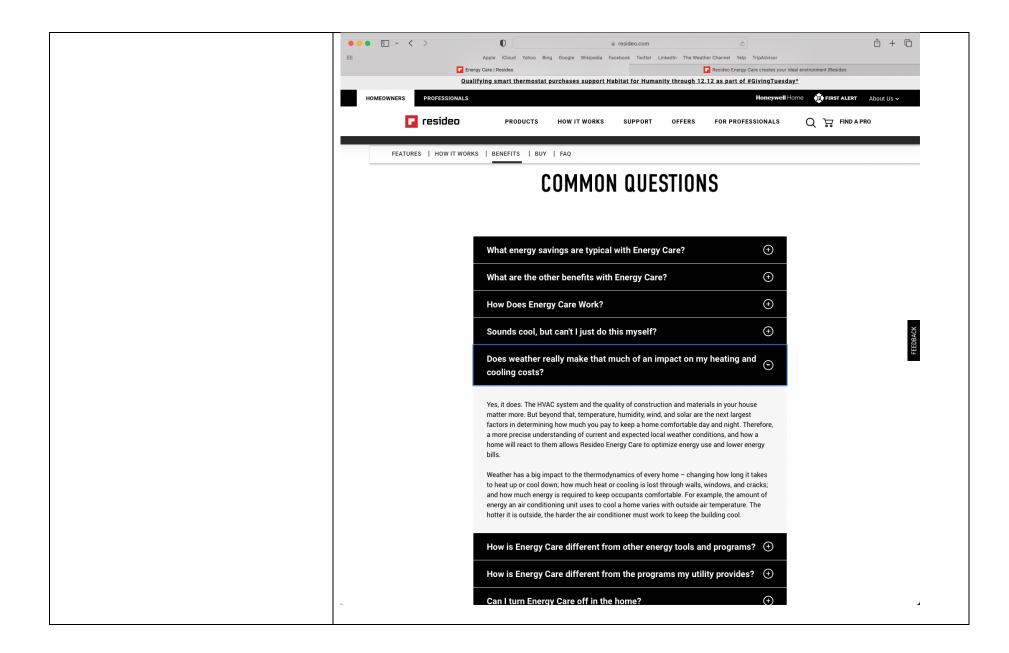


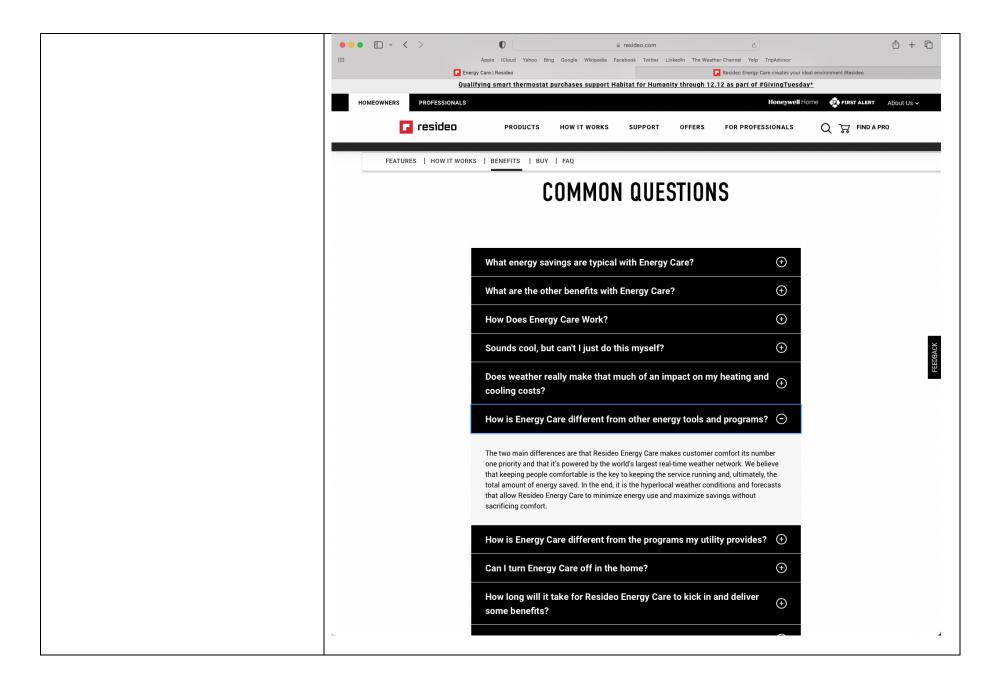


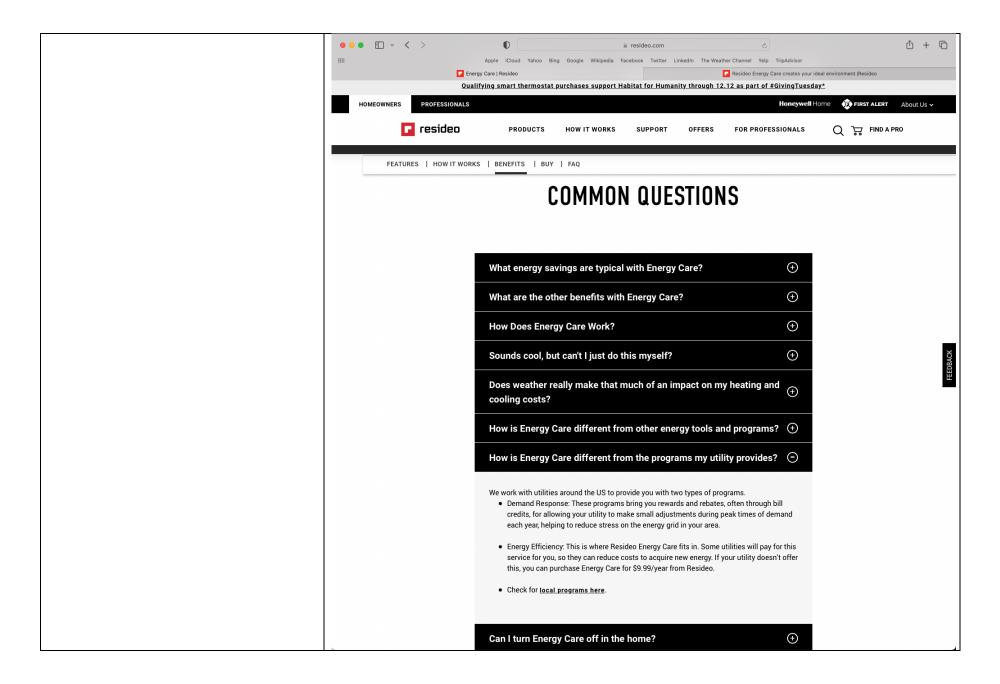














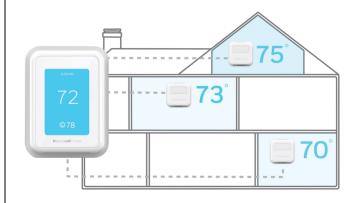


PRODUCT OVERVIEW

The T9 Smart Thermostat works with Smart Room Sensors to hel you adjust the temperature from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T9 works toward creating an average temperature, balancing the needs across the whole home.

Whether it's a song belted in the shower or a whispered secret, your air goes beyond simply carrying oxygen to circulating memories. Heavy or light, hot or cold, always unique to your home, the air you feel is more than its temperature setting. Our Air products and services work with you and for you, supporting and creating more comfortable surroundings.



"THE BEST RANGE I'VE SEEN IN THIS CLASS OF PRODUCT."

Focus on multiple rooms for comfort where it matters most. Don't guess at the temperature in the bedroom from the hallway. Get the comfort you want, where you want it – to sleep, work, focus or unwind.

 $\underline{https://www.resideo.com/us/en/products/air/thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/t9-smart-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-thermostats/wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-therwowner-wifi-th$

See also T10 Pro Smart Thermostat with RedLINK Room Sensor brochure:

https://digitalassets.resideo.com/damroot/Original/10004/03-

<u>00458.pdf?</u> ga=2.56182061.768294451.1641940625-374792558.1641940625

See also T10 Pro Smart Thermostat with RedLINK Getting Started guide: https://digitalassets.resideo.com/damroot/Original/10014/33-00424EFS.pdf?_ga=2.123077901.768294451.1641940625-374792558.1641940625

See also T10 Pro Smart Thermostat with RedLINK User Guide: https://digitalassets.resideo.com/damroot/Original/10003/33-00428.pdf? ga=2.52964526.768294451.1641940625-374792558.1641940625

See also Honeywell Home T9 Smart Thermostat with Smart Room Sensors video: https://www.youtube.com/watch?time continue=6&v=LIdFkaxqSG0&feature=emb title

Selecting system mode

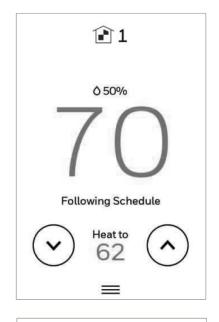
Touch homescreen to wake the thermostat.

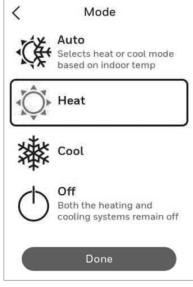
Touch the menu icon and then touch "Select Mode."

- **Heat**: Controls the heating system.
- Cool: Controls the cooling system.
- Off: Turns the heating and cooling systems off.
- **Auto**: When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat**: Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

Notes:

- All available modes may not be shown for some applications. Scroll down to see more mode options (if available).
- Auto mode may not appear on the thermostat screen or in the app depending on your equipment, and how your thermostat is configured.
- When Auto is selected, "Heat to" and "Cool to" will both be shown from the "active" home screen.
- Em Heat is only available for heat pump systems. The thermostat must also be configured to control a heat pump and an auxiliary/emergency heat stage.
- When Auto is selected, "Heat to" and "Cool to" will both be shown from the "active" home screen.





Main Menu on Thermostat

From Home Screen, press the menu icon at bottom of the display (3 horizontal lines). If this is not shown at home screen, touch screen to wake display first.

Main Menu options

System mode (Available modes vary depending on how the thermostat was configured)

- Heat
- Off
- Cool
- Auto Operation on page 9.
- Em Heat Operation on page 9.

Fan (Fan setting not available for all system types)

- Auto (Fan only runs with a call for heat or cool)
- On (fan runs continous)
- Circulate (fan runs randomly approx. 33% of the time)

Priority

If wireless indoor temperature/humidity/motion sensors are used, select which sensors are used for temperature control. You can choose active sensor (ones detecting motion) or manually select which sensors to use.

Schedule

- Create new schedule (Set a time-based schedule)
- Disable schedule
- · Reset to default schedule

NOTE: To enable geofencing, use the Honeywell Home app.

Management:

Devices & Sensors

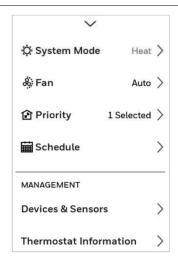
- · View the temperature and humidity reading from Smart Room Sensors
- · Identify a Smart Room Sensor
- Add a new Smart Room Sensor
- Remove a Smart Room Sensor

Thermostat information

- Mac Address
- IP Address
- Date Code
- Build Date
- Model Number Collection Version
- Wi-Fi Bootloader Version
- Wi-Fi Application Version

Equipment Status

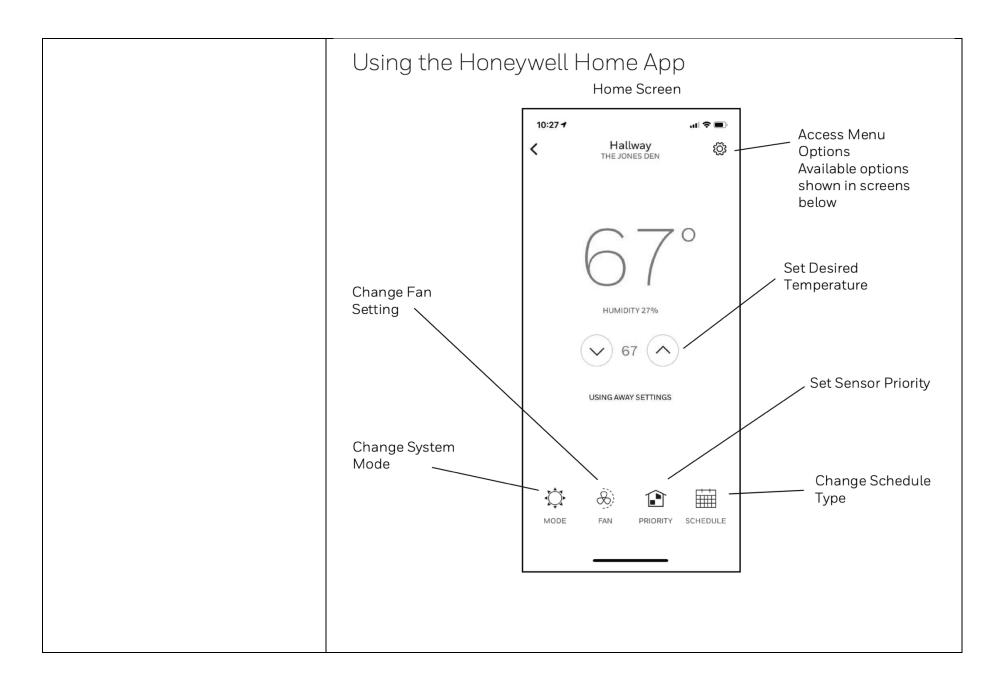
- System mode
- Heat stages (on or off)
- · Cool stages (on or off)
- Fan on or off



Configuration:

- Wi-Fi
- Connect App
- Security
- Preferences
- · Advanced Setup

Scroll down to see more options



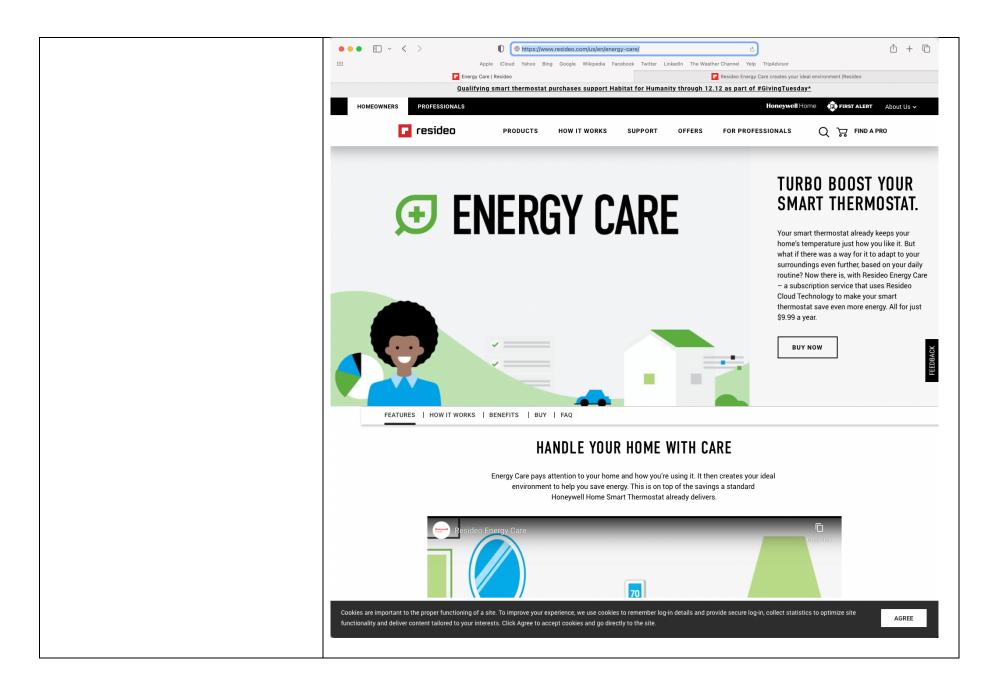
1[b] one or more databases that store at
least said temperatures measured at said
first location over time; and

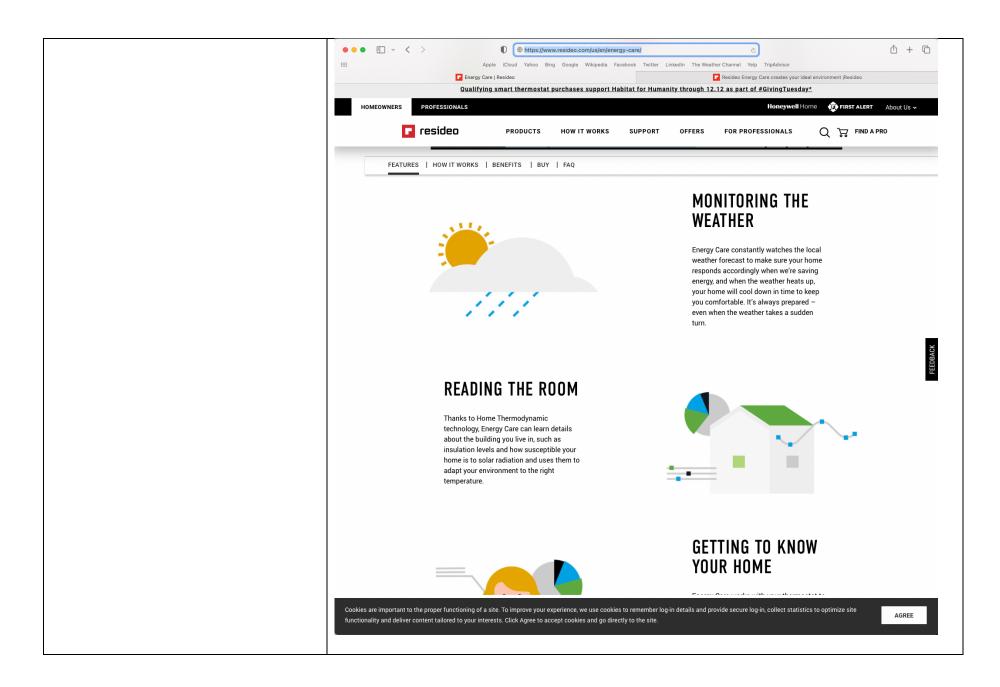
The Accused Products/Instrumentalities includes one or more databases that store at least said temperatures measured at said first location over time. See 1[a] and additional evidence/explanation cited therein.

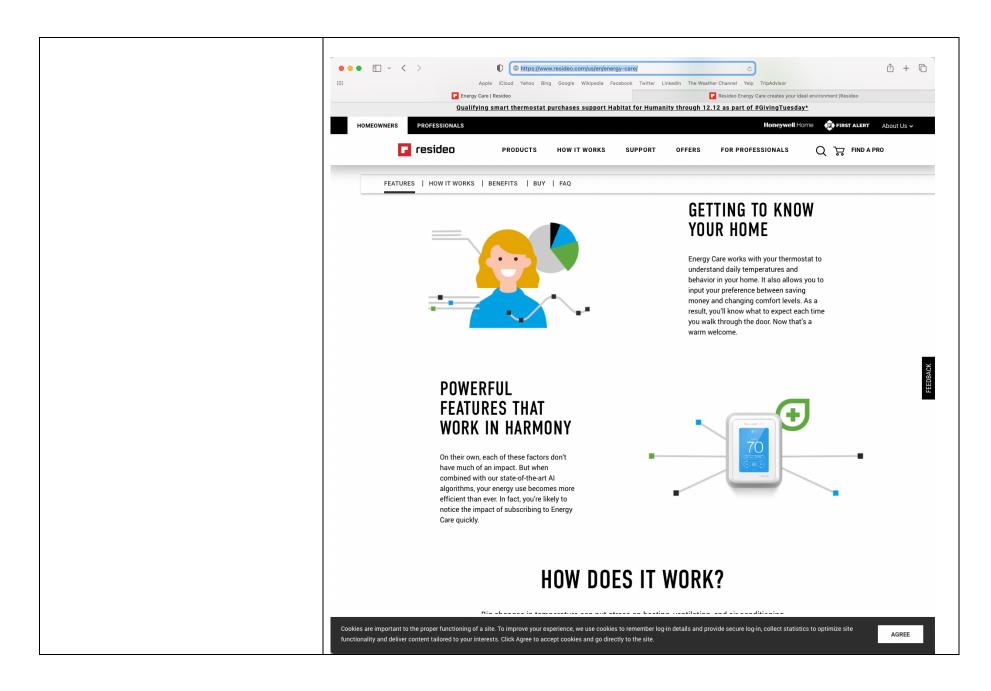
For example, the Accused Products/Instrumentalities includes one or more databases corresponding to Resideo Cloud Technology database(s) that are used for Energy Care. The database(s) exist in the cloud and are controlled by Resideo cloud server technology that receives inside temperature data from the connected thermostats over time. The database that stores the inside temperatures is used for the Energy Care Home Thermodynamic cloud technology and the energy model trained and used for Energy Care. See, e.g., www.resideo.com/us/en/energy-care/ (Energy Care "uses data from your connected thermostat and hyperlocal weather data to develop a custom energy model of the home to understand how each one responds to varying weather conditions. Using this model, Resideo Energy Care then sends optimized thermostat schedules to participating thermostats each day based on the forecasted weather, the thermal properties of the home, and a customer's selected comfort settings. The result is lower energy use and costs without sacrificing customer comfort." Further, Energy Care makes sure that "when the weather heats up, your home will cool down in time to keep you comfortable."); ("Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature... Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."); (Energy Care can not only use "integrals and heat transfer equations," "analyzing large volumes of data," to develop a "more precise understanding of current and expected local weather conditions, and how a home will react to them," not only to "optimize thermostat settings each day" but also "recalculates settings on-the-fly"); (Energy Care calculates "how long it takes to heat up or cool down; how much heat or cooling is lost through walls, windows, and cracks; and how much energy is required to keep occupants comfortable" based on and in response to the weather.)

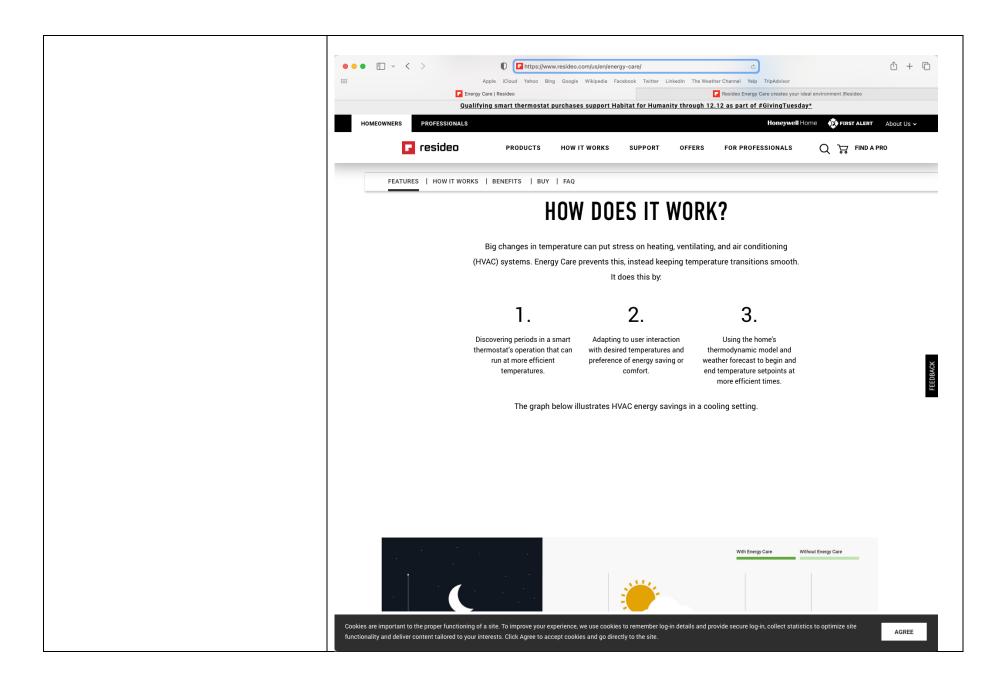
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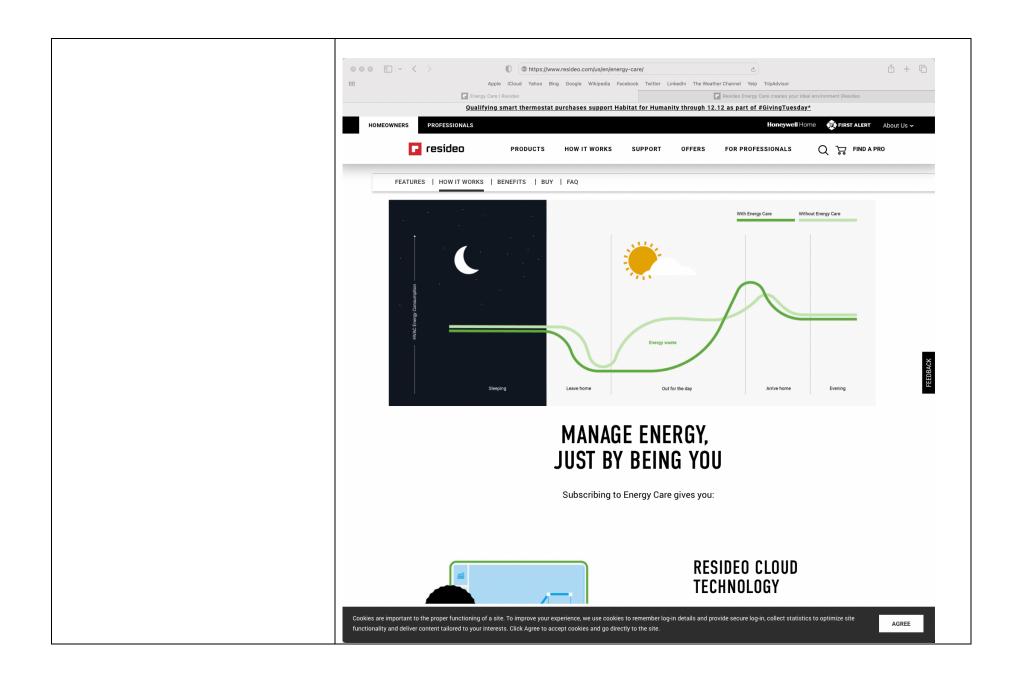
As another example, see, e.g., Energy Care home page snapshots, https://www.resideo.com/us/en/energy-care/ :

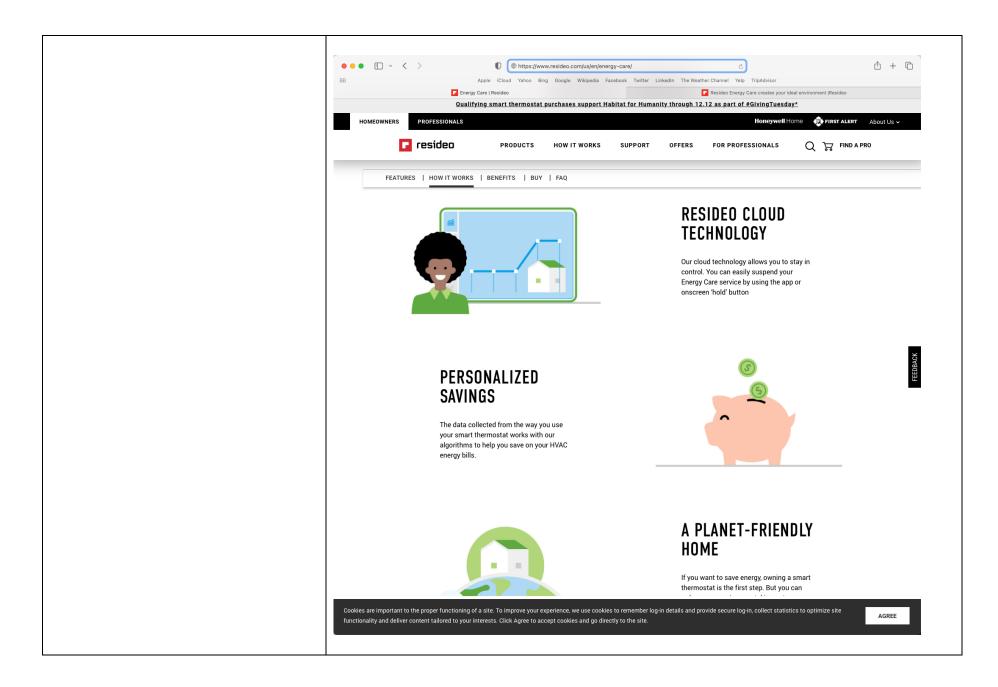


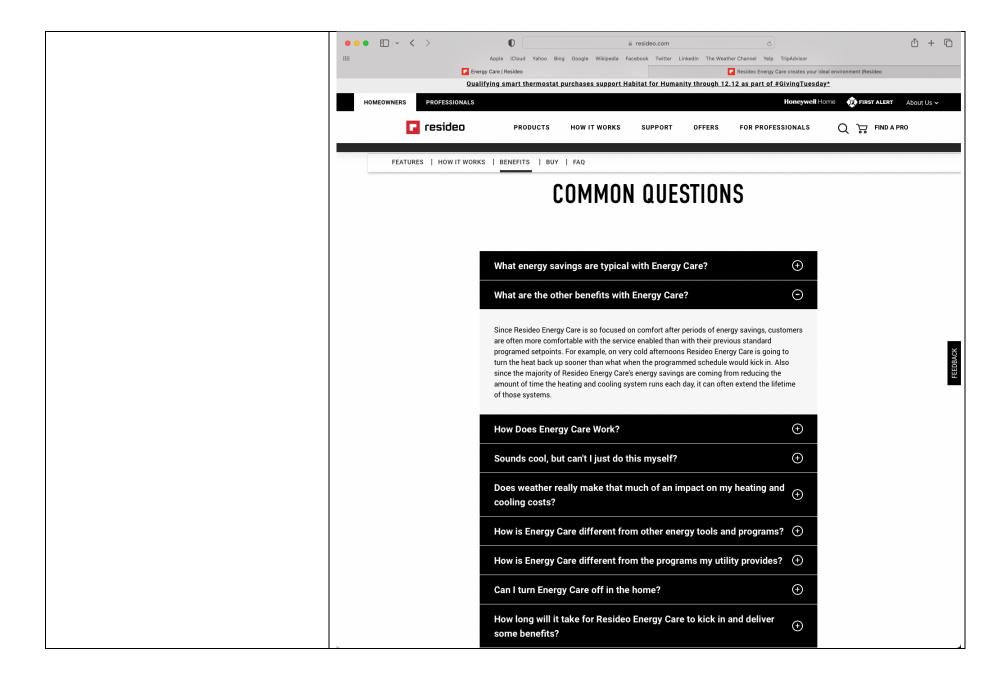


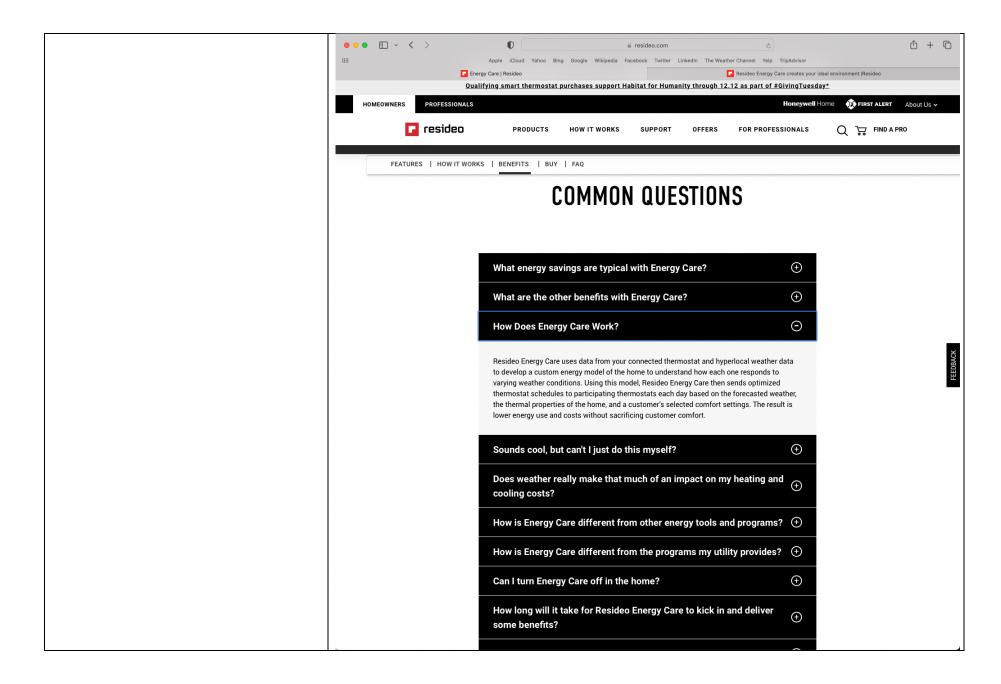


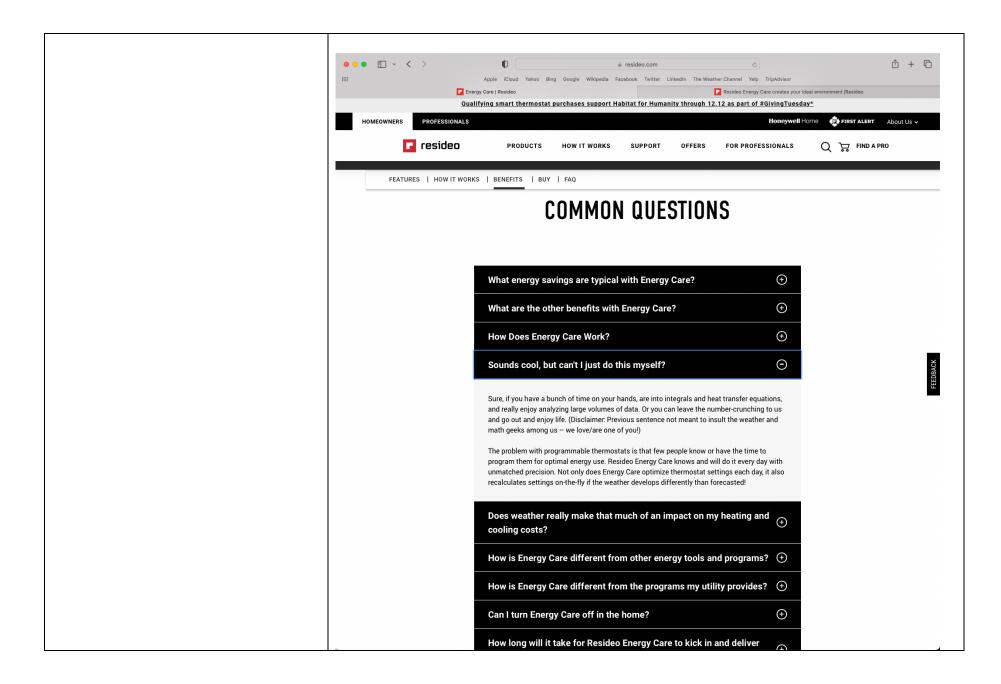


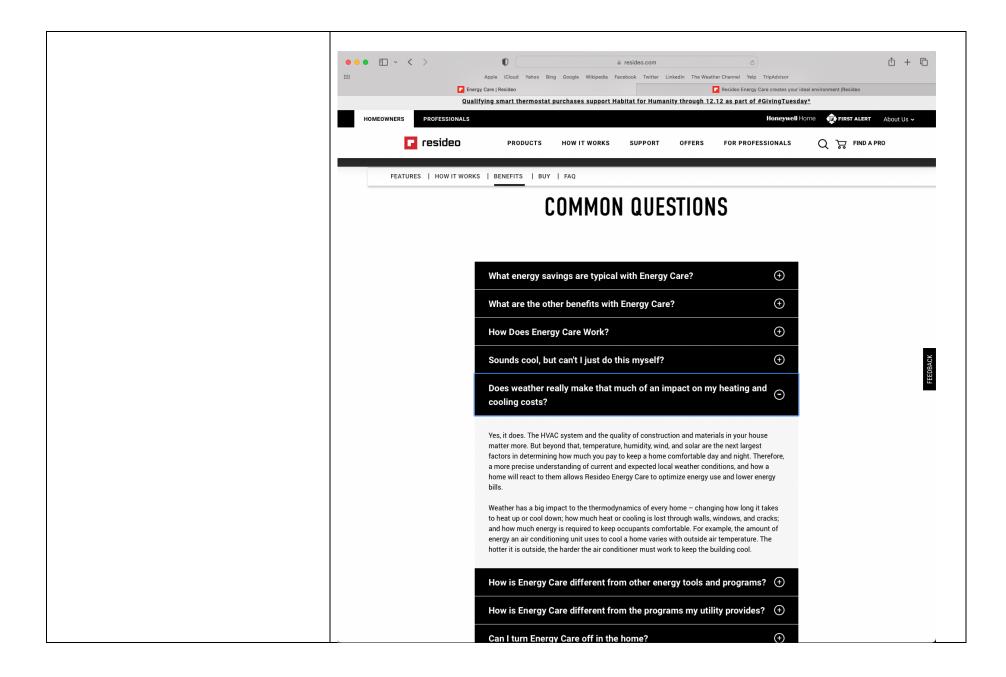


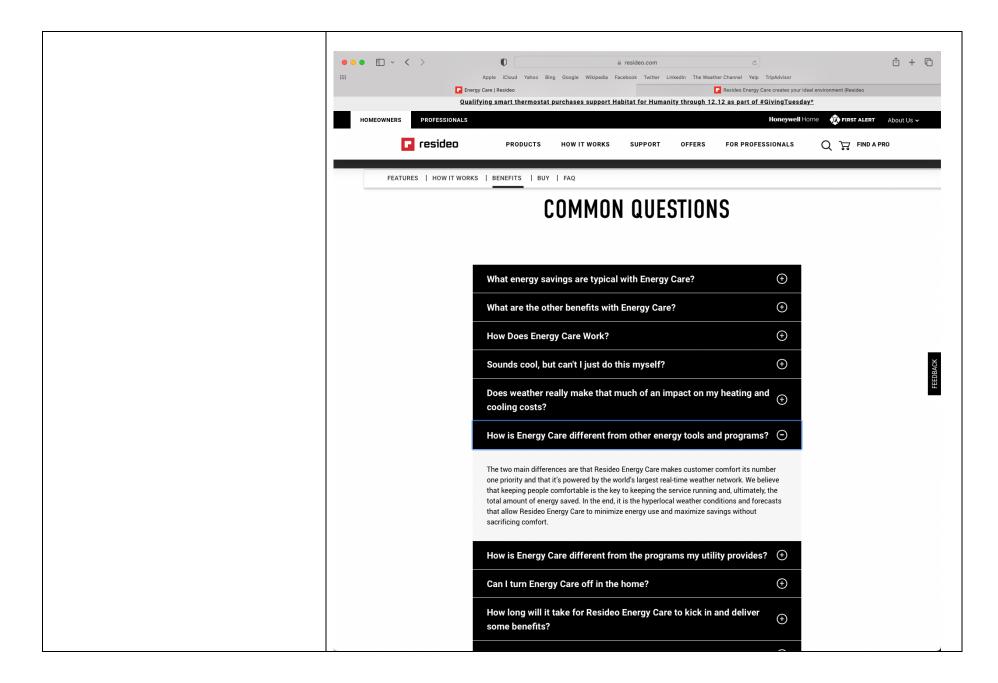


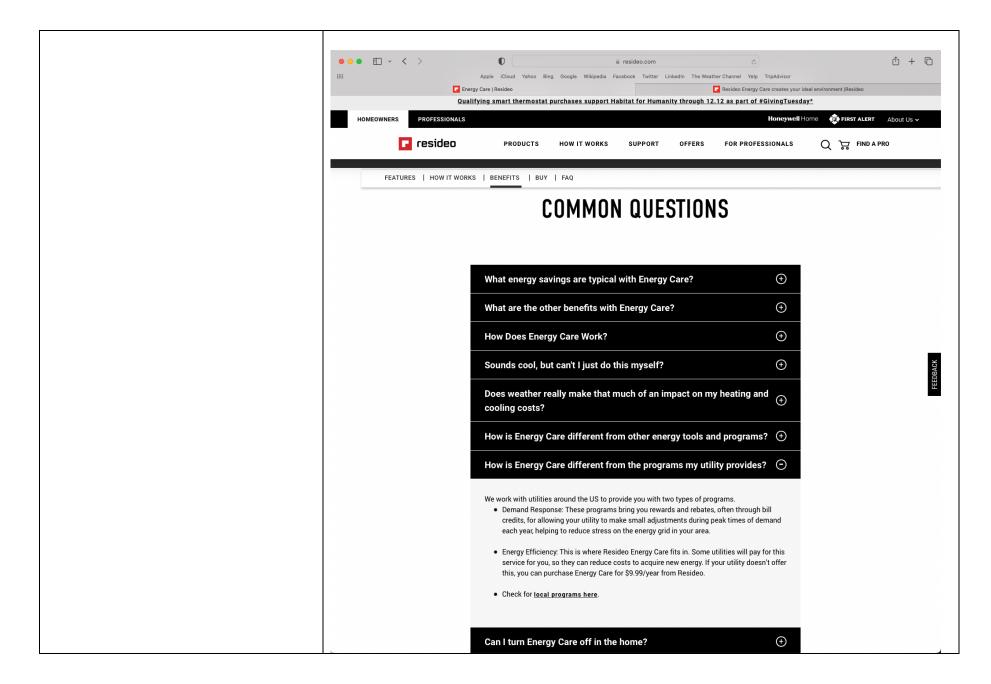












1[c] one or more processors that receive outside temperature measurements from at least one source other than said HVAC system and compare said temperature measurements from said first location with expected temperature measurements wherein the expected temperature measurements are based at least in part upon past temperature measurements and said outside temperature measurements, wherein said one or more processors are configured to calculate one or more first rates of change in temperature at said first location for periods during which the status of the HVAC system is "on" and wherein said one or more processors are further configured to calculate one or more second rates of change in temperature at said first location for periods during which the status of the HVAC system is "off", and to relate said first and second calculated rates of change to said outside temperature measurements.

The Accused Products/Instrumentalities includes [i] one or more processors that receive outside temperature measurements from at least one source other than said HVAC system and [ii] compare said temperature measurements from said first location with expected temperature measurements wherein the expected temperature measurements are based at least in part upon past temperature measurements and said outside temperature measurements, [iii] wherein said one or more processors are configured to calculate one or more first rates of change in temperature at said first location for periods during which the status of the HVAC system is "on" and wherein said one or more processors are further configured to calculate one or more second rates of change in temperature at said first location for periods during which the status of the HVAC system is "off", and to relate said first and second calculated rates of change to said outside temperature measurements. See 1[pre] and additional evidence/explanation cited therein.

The Accused Products/Instrumentalities includes one or more processors. For example, the Accused Products/Instrumentalities include processors that are used for the Resideo Cloud Technology that enables e.g., Energy Care, energy efficiency, community savings, etc. energy features. The thermostats also include processors which may be additionally included in the mapping for "one or more processors," but there is infringement where "one or more processors" corresponds to the Resideo Cloud Technology processors alone, or in combination with the thermostat processor(s).

The Accused Products/Instrumentalities include [i] one or more processors that receive outside temperature measurements from at least one source other than said HVAC system. The Accused Products use the outside temperature measurements for e.g. the Energy Care feature. The weather data that includes outside temperature measurements comes from a weather service which is a source other than the HVAC system. See, e.g.,

https://www.resideo.com/us/en/energy-care/ ("Monitoring the weather: Energy Care constantly watches the local weather forecast to make sure your home responds accordingly when we're saving energy, and when the weather heats up, your home will cool down in time to keep you comfortable. It's always prepared even when the weather takes a sudden turn."). Energy Care processors receive both current data and forecasted data. *Id.* See also, e.g.,

https://www.resideo.com/us/en/pro/products/air/thermostats/wifi-thermostats/t10-pro-smart-

thermostat-with-redlinkr-room-sensor-thx321wfs2001w-u/ (Product Features includes "Internet weather" and "indoor temperature, humidity and motion sensors" and "heat and cool" with support for multiple heat/cool stages") ("location-based temperature control").

Moreover, even if literal infringement were not found, the Resideo accused products would nonetheless also meet this claim element ("receive outside temperature measurements from at least one source other than said HVAC system") under the Doctrine of Equivalents by performing substantially the same function in substantially the same way to achieve the same result. The accused features and functions are insubstantially different from the claimed features and functions. For example, each Resideo accused product performs substantially the same function of receiving outside temperature measurements (e.g., by receiving outside weather data from a third-party provider and storing them in one or more databases). Each Resideo accused product also does so in substantially the same way (e.g., obtaining sufficiently current and geographically accurate outside temperature values corresponding to the relevant time and location of the customer's home and using such values as outside temperature measurements). Even if there is processing done to either generate or correct the measurements, whether the processing is done by the weather service or Resideo, that is still substantially the same way as receiving outside temperature measurements. And each Resideo accused product does this to achieve the same result of having outside temperature information (e.g., temperature values in degrees F or C) for use in providing various features, such as Energy Care. To the extent the weather data is processed, normalized, or reformatted before, during, or after it is collected, this would still be literal infringement or insubstantially different from the claim limitation.

The Accused Products/Instrumentalities include [ii] one or more processors that compare said temperature measurements from said first location with expected temperature measurements wherein the expected temperature measurements are based at least in part upon past temperature measurements and said outside temperature measurements [that are received from at least one source other than said HVAC system]. The one or more processors (e.g., the processors used for Energy Care, alone or in combination with the thermostat processor(s)) compare the inside temperature measurements from said first location with expected temperature measurements for the first location, where the expected temperature measurements are based in part upon past temperature measurements and the outside temperature measurements, because the past temperature measurements and the outside temperature measurements are used as inputs to the

Energy Care feature, including the Resideo Cloud Technology and the Home Thermodynamic Model and other aspects of the Energy Care feature described on the Resideo Energy Care website. These features involve, inter alia, comparing the past inside temperatures with the outside temperatures received from the weather service over time in order to generate a model that predicts expected temperature measurements based on the past inside temperature measurements and the received outside weather data containing outside temperature measurements. The Energy Care features also compare the expected inside temperatures with received inside temperature data for several purposes, including, inter alia, e.g., model training, model evaluation, updating the model, instantiating the model, pre-cooling or pre-heating, evaluating setpoint strategies, evaluating control strategies, evaluating energy efficiency, energy analysis, energy savings analysis, generating metrics about the user's HVAC system and home. See, e.g., <u>www.resideo.com/us/en/energy-care/</u> ("Resideo Energy Care – a subscription service that uses Resideo Cloud Technology to make your smart thermostat save even more energy. All for just \$9.99 a year... Energy Care pays attention to your home and how you're using it. It then creates your ideal environment to help you save energy. This is on top of the savings a standard Honeywell Home Smart Thermostat already delivers...Energy Care constantly watches the local weather forecast to make sure your home responds accordingly when we're saving energy, and when the weather heats up, your home will cool down in time to keep you comfortable. It's always prepared – even when the weather takes a sudden turn...Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature... Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."). As an example, Energy Care can not only use "integrals and heat transfer equations," "analyzing large volumes of data," to develop a "more precise understanding of current and expected local weather conditions, and how a home will react to them" to "optimize thermostat settings each day" but also "recalculates settings on-thefly," which is another example of comparing expected inside temperatures with received inside temperatures, wherein the expected inside temperatures are based on past inside temperatures and outside temperatures. For example, Energy Care calculates "how long it takes to heat up or

cool down; how much heat or cooling is lost through walls, windows, and cracks; and how much energy is required to keep occupants comfortable" based on and in response to the weather.

In the U.S. District Court for the Western District of Texas, Case No. 6:22-cv-00033-ADA, the parties agreed to the construction of "rate of change in temperature" as "difference between inside temperature measurements divided by the span of time between the measurements"; a construction of "relate said calculated rates of change to said outside temperature measurements" where "relate" means "correlate" and "related" means "correlated"; a construction of "compare" as "analyze to determine one or more similarities or differences between." The U.S. District Court for the Western District of Texas in Case No. 6:22-cv-00033-ADA also construed the term "said calculated rates of change" as not indefinite, no construction necessary, plain and ordinary meaning, rejecting a defendant's proposed construction that the term was indefinite.

The Accused Products/Instrumentalities include [iii] one or more processors that are configured to calculate one or more first rates of change in temperature at said first location for periods during which the status of the HVAC system is "on" and wherein said one or more processors are further configured to calculate one or more second rates of change in temperature at said first location for periods during which the status of the HVAC system is "off", and to correlate said first and second calculated rates of change to said outside temperature measurements.

The one or more processors (e.g., the processors used for Energy Care, alone or in combination with the thermostat processor(s)) calculate the first rates of change (periods when the HVAC system status is "on", i.e., actively heating/cooling) and calculate the second rates of change (periods when the HVAC system status is "off," i.e., not actively heating/cooling) with the Energy Care feature, including the Resideo Cloud Technology and the Home Thermodynamic Model and other aspects of the Energy Care feature described on the Resideo Energy Care website. These features involve, *inter alia*, comparing the inside temperatures received using the thermostat with the outside temperatures received from the weather service over time in order to generate a model that predicts expected temperature measurements based on the past inside temperature measurements and the received outside weather data containing outside temperature measurements. Training, updating, and/or using model includes calculating the first rates of change for periods when the HVAC system status is "on" and the second rates of change for

periods when the HVAC system status is "off." The Energy Care website confirms that rates of change in temperature for both scenarios are calculated for several purposes, including, inter alia, e.g., model training, model evaluation, updating the model, instantiating the model, precooling or pre-heating, evaluating setpoint strategies, evaluating control strategies, evaluating energy efficiency, energy analysis, energy savings analysis, generating metrics about the user's HVAC system and home. See, e.g., www.resideo.com/us/en/energy-care/ ("Resideo Energy Care – a subscription service that uses Resideo Cloud Technology to make your smart thermostat save even more energy. All for just \$9.99 a year...Energy Care pays attention to your home and how you're using it. It then creates your ideal environment to help you save energy. This is on top of the savings a standard Honeywell Home Smart Thermostat already delivers...Energy Care constantly watches the local weather forecast to make sure your home responds accordingly when we're saving energy, and when the weather heats up, your home will cool down in time to keep you comfortable. It's always prepared – even when the weather takes a sudden turn...Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature... Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."). As an example, Energy Care can not only use "integrals and heat transfer equations," "analyzing large volumes of data," to develop a "more precise understanding of current and expected local weather conditions, and how a home will react to them" to "optimize thermostat settings each day" but also "recalculates settings on-the-fly." For example, Energy Care calculates "how long it takes to heat up or cool down; how much heat or cooling is lost through walls, windows, and cracks; and how much energy is required to keep occupants comfortable" based on and in response to the weather. See, e.g., www.resideo.com/us/en/energy-care/. By calculating "how long it takes to heat up or cool down," Energy Care calculates the rate of change in inside temperature. Further, Energy Care "uses data from your connected thermostat and hyperlocal weather data to develop a custom energy model of the home to understand how each one responds to varying weather conditions. Using this model, Resideo Energy Care then sends optimized thermostat schedules to participating thermostats each day based on the forecasted

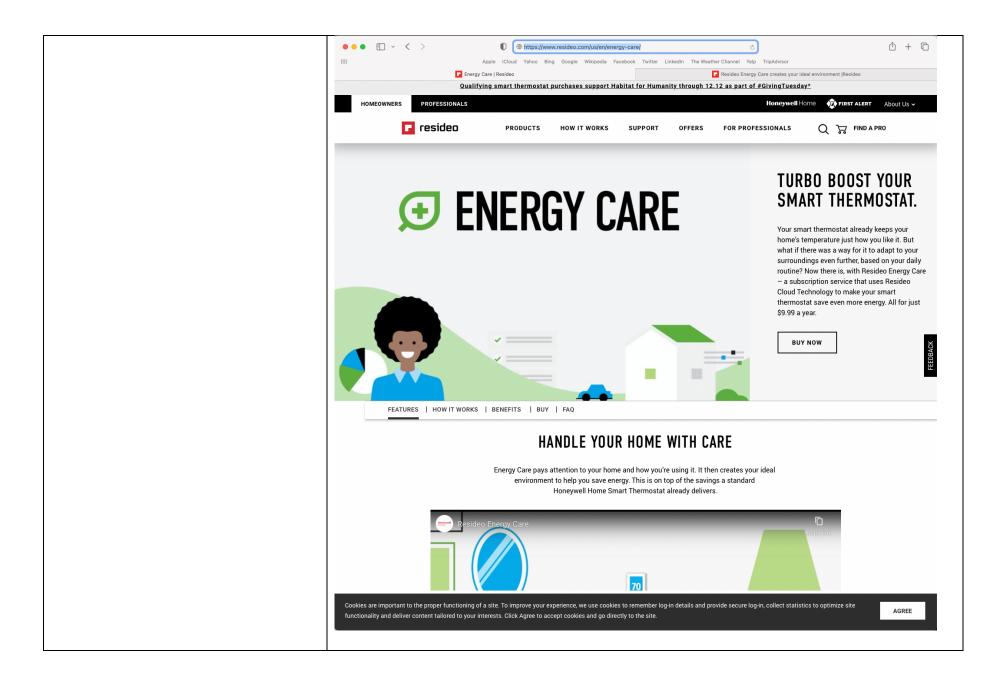
weather, the thermal properties of the home, and a customer's selected comfort settings. The result is lower energy use and costs without sacrificing customer comfort." Further, Energy Care makes sure that "when the weather heats up, your home will cool down in time to keep you comfortable." Accordingly, Energy Care calculates the first rates of change corresponding to periods when the HVAC system is "on" in response to changes in outside temperature so that it can ensure that the HVAC system will cool or heat the home in time when it is turned "on." Further, Energy Care calculates the second rates of change because it understands the "thermal properties of the home," which in the model corresponds to how quickly the home will lose heat or cooling in response to changes in outside temperature during periods when the HVAC system is "off." Further, the first and second rates of change are both correlated to outside temperature measurements, because they are both calculated through model training and model evaluation that correlates the rates of change to the "weather" data including the outside temperatures. The Energy Care feature can predict how fast the home should heat or cool in response to changes in outside temperatures both in the event of the HVAC system turning on and in the event of the HVAC system remaining off because it has calculated both the "first" and "second" rates of change and correlated them both to the outside temperature measurement data received from the weather service. To the extent infringement of this limitation is disputed, there would also be infringement under the doctrine of equivalents, because the foregoing functionality is insubstantially different from the claim limitations. The Resideo cloud technology model performs substantially the same function of the claim limitation in substantially the same way of predicting temperatures with thermodynamic modeling of indoor and outdoor temperatures and correlating the rates of change with outdoor temperatures both for cases where the HVAC is actively heating/cooling and where it is not actively heating/cooling to achieve substantially the same result of accurate home and HVAC system thermodynamic modeling.

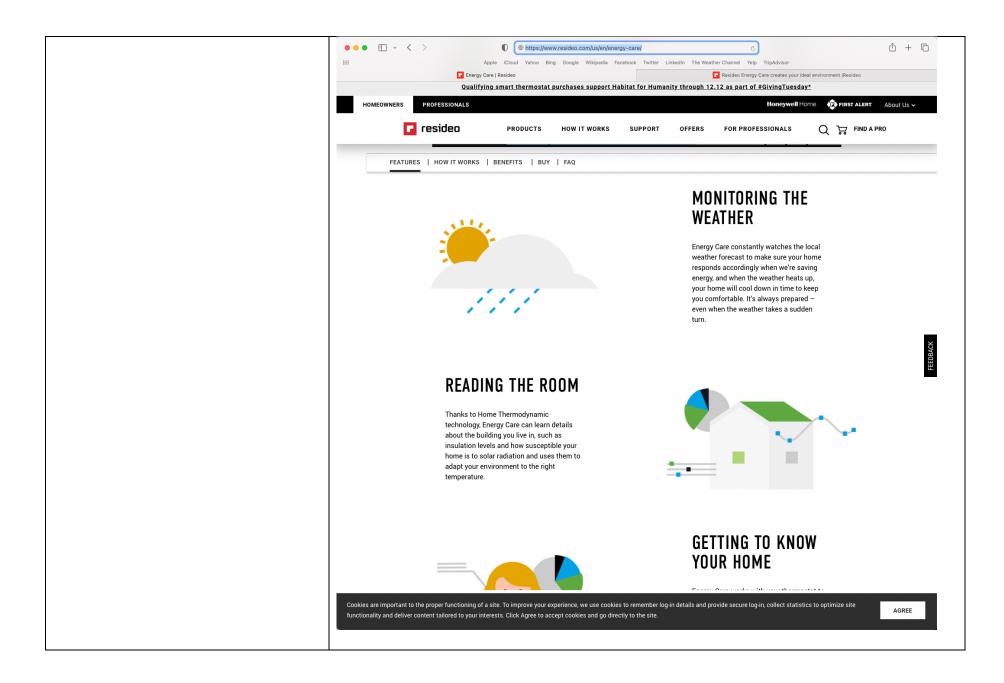
See, e.g., T Series Comparison Chart, available at https://digitalassets.resideo.com/damroot/Original/10014/03-00306.pdf:

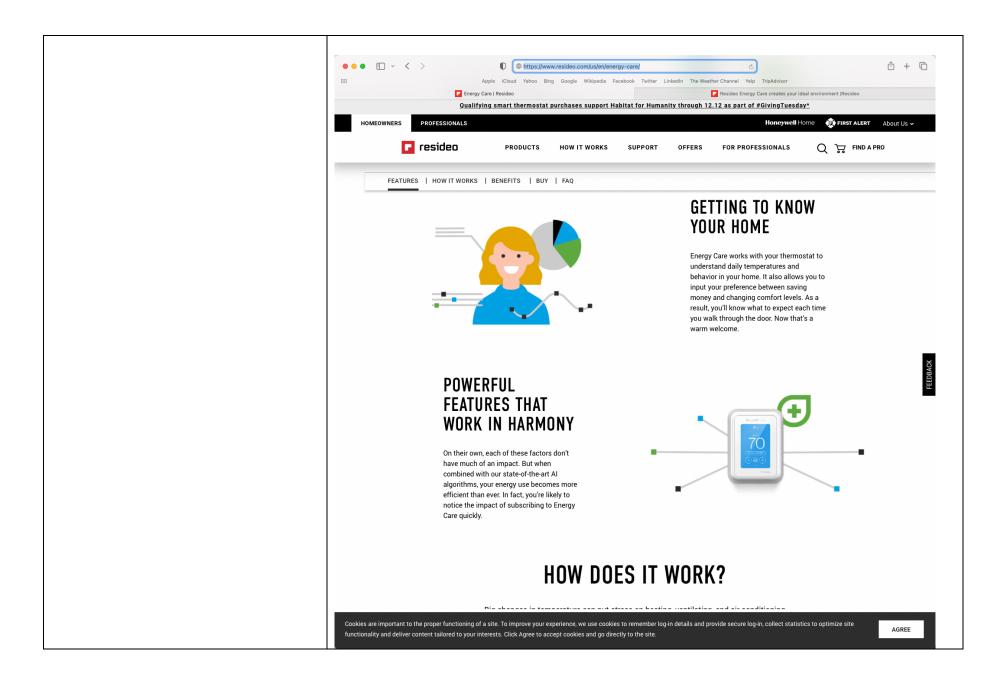
ERIES CO	MPARISON CHART					_			
Thermostat	Thermostat name	Program options	Power method	Display size	Stages	Dual fuel	Ventilation with ERV/HRV or damper	Wired indoor/ outdoor sensors	Service reminders
72	T10 Pro Smart with RedLINK® Room Sensor THX321WFS2001W RedLINK® Room Sensor (2-pack) C7189R2002-2	Geofencing, 7-day, 5-2, 5-1, 1 or non-programmable	C-wire only	7.27 sq. in.	3H/2C Heat Pump + 2H/2C Corwentional	Yes	Yes* "Withhumidifier, dehumidifier, or ventilator capabilities	Yes	Yas
72 to	T10 Pro Smart THX321WF2003W	Geofencing, 7-day, 5-2, 5-1-1, 1 or non-programmable	C-wire anly	7.27 sq. in.	3H/2C Heat Pump + 2H/2C Conventional	Yes	Yes* "Withhumidifier, dehumidifier, or ventilator capabilities	Yes	Yes
18	T6 Pro Smart TH6320WF2003	Geofencing, 7-day, 5-2, 5-1-1 or non-programmable	C-wire anly	6.89 sq. in.	3H/2C Heat Pump+ 2H/2C Corwentional	Yes	Yes	Yes	Yes
1. E.	T6 Pro Smart TH6220WF2006	Geofencing, 7-day, 5-2, 5-1-1 or non-programmable	C-wire anly	6.89 sq. in.	2HV1C Heat Pump+ 2H/2C Corwentional	No	No	Yes	Yes
5.	T6 Pro Z-Wave'* TH6320ZW2003	7-day, 5-2, 5-1-1, non-programmable or occupancy controlled	Battery or C-wire	6.89 sq. in.	3H/2C Heat Pump+ 2H/2C Corwentional	Yes	No	Yes	Yes
)	TG Pro Hydronic TH6100AF2004	7-day, 5 2, 5 1 1 or non-programmable	Battery or C-wire	5,44 sq. in.	1 Stage Hot Water Heat Only – No Fan	No	No	Yes	No
A STATE OF THE PERSONS	T6 Pro TH6320U2008	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	5,44 sq. in.	3H/2C Heat Pump+ 2H/2C Corwentional	Yes	No	Yes	Limited
-5-	T6 Pro TH6220U2000	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	5.44 sq. in.	2H/1C Heat Pump + 2H/2C Corwentional	Yes	No	Yes	Limited
-5-	T6 Pro TH6210U2001	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	5.44 sq. in.	2H/1C Heat Pump + 1H/1C Corwentional	No	No	No	Limited
文	T4 Pro TH4210U2002	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	3.93 sq. in.	2H/1C Heat Pump+ 1H/1C Corwentional	No	No	No	Limited
2	T4 Pro TH4110U2005	7-day, 5-2, 5-1-1 or non-programmable	Battery or C-wire	3.93 sq. in.	1HV1C Heat Pump+ 1HV1C Corwentional	No	No	No	Limited
P.	T3 Pro TH3210U2004	Non-programmable	Rattery or C-wire	3.32 sq. in.	2H/1C Heat Pumps + 1H/1C Corwentional Systems	No	No	No	No
è	T3 Pro TH3110U2008	Non-programmable	Battery or C-wire	3.32 sq. in.	1H/1C Heat Pumps + 1H/1C Corwentional Systems	No	No	No	No
Ţģ.	T1 Pro TH1110D2009	Non-programmable	Battery or C-wire	2.37 sq. in.	1H/1C Conventional or 1H/1C Heat Pump	No	No	No	No
79	T1 Pro TH101002000	Non-programmable	Battery or C-wire	2.37 sq.in.	1 stage heat-only or cool-only	No	No	No	No

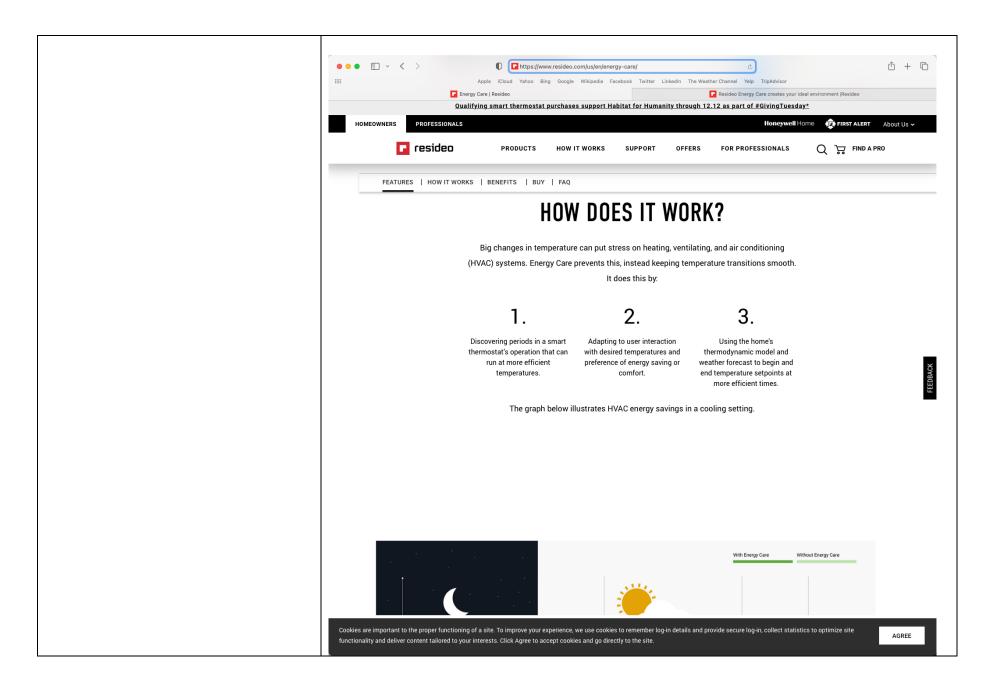
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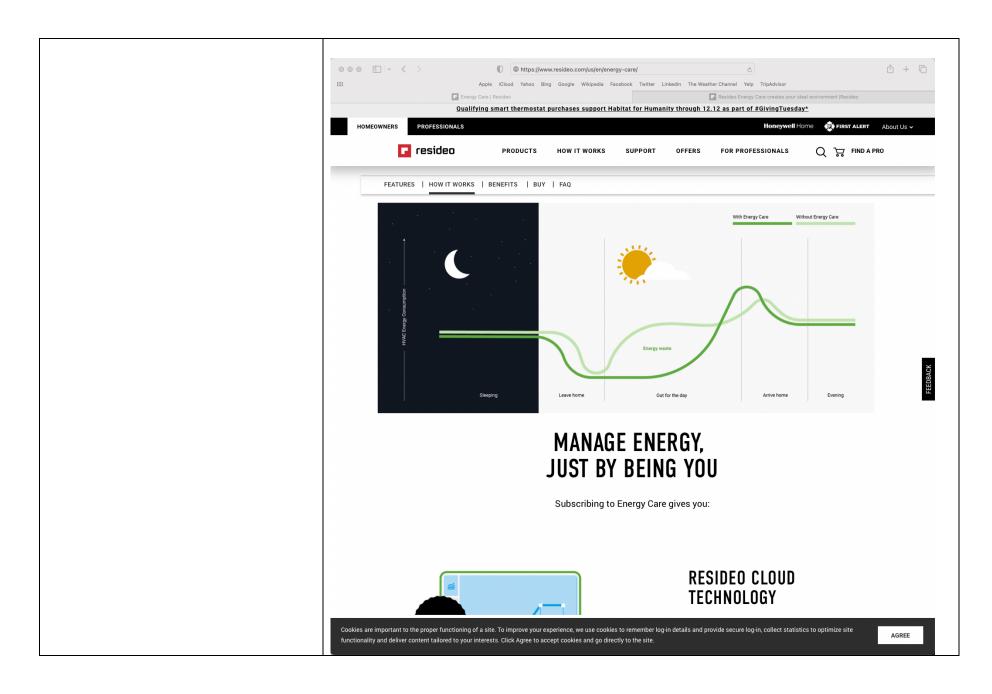
See, e.g., T6 Pro, T10 Pro brochures and data sheets.
As another example, see, e.g., Energy Care home page snapshots, https://www.resideo.com/us/en/energy-care/ :

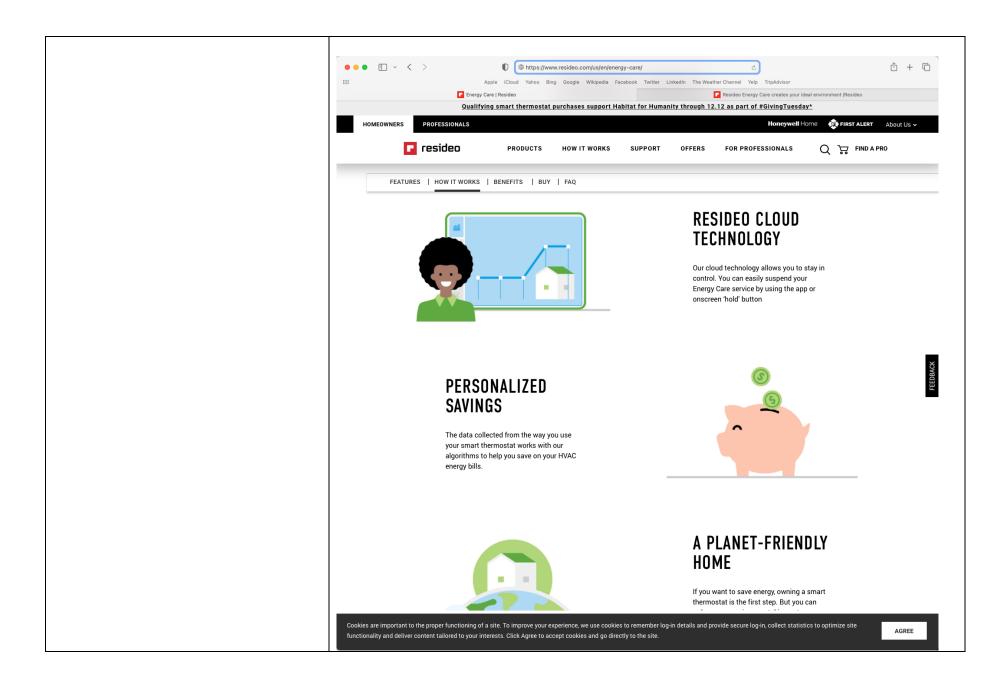


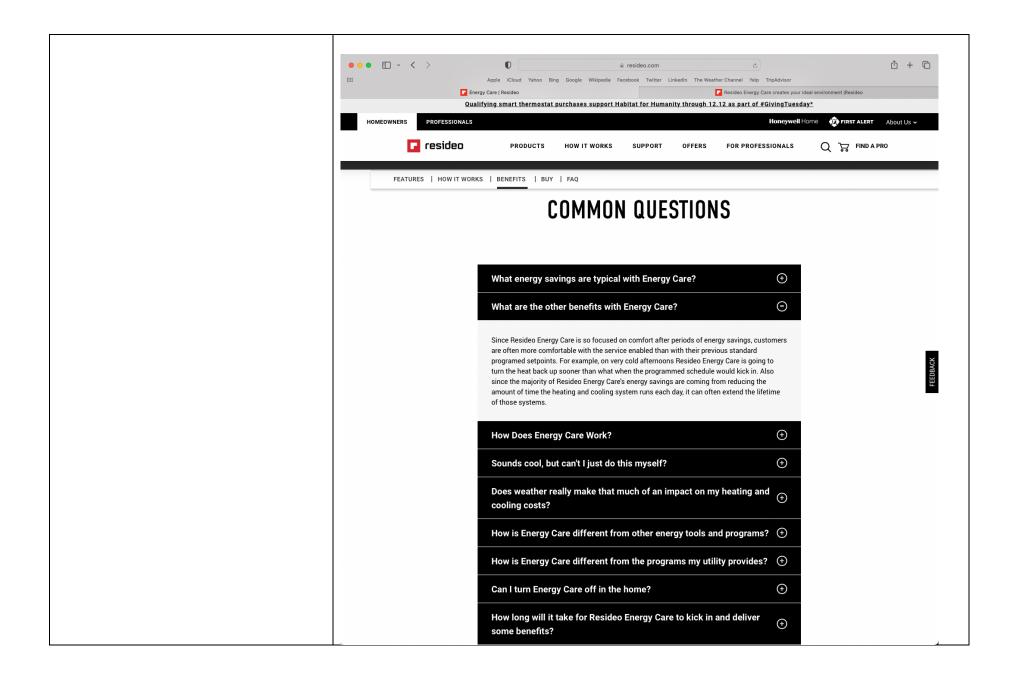


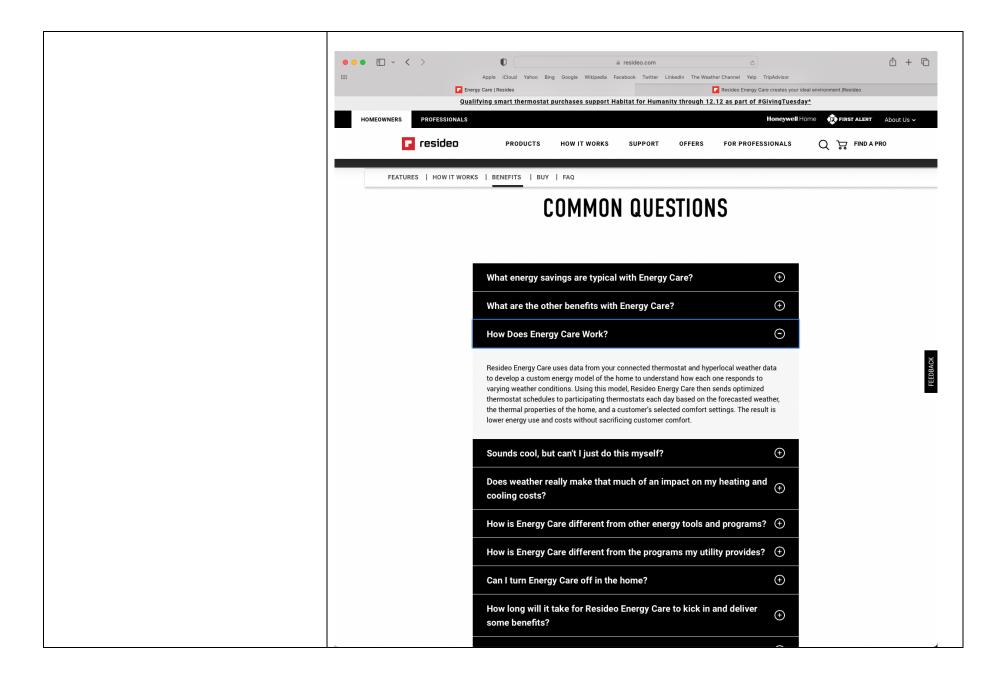


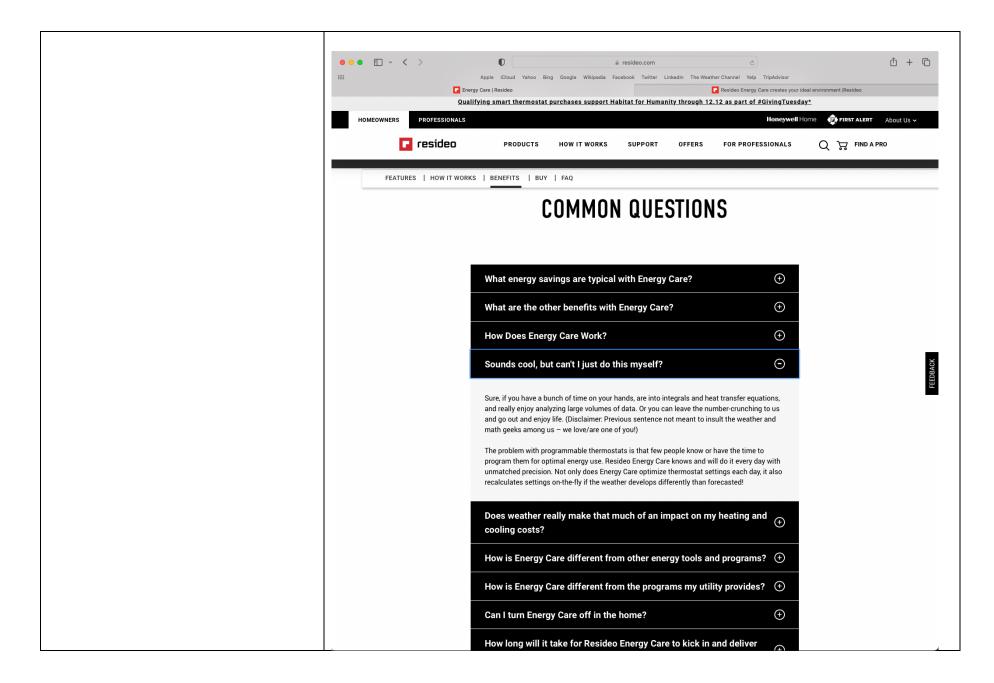


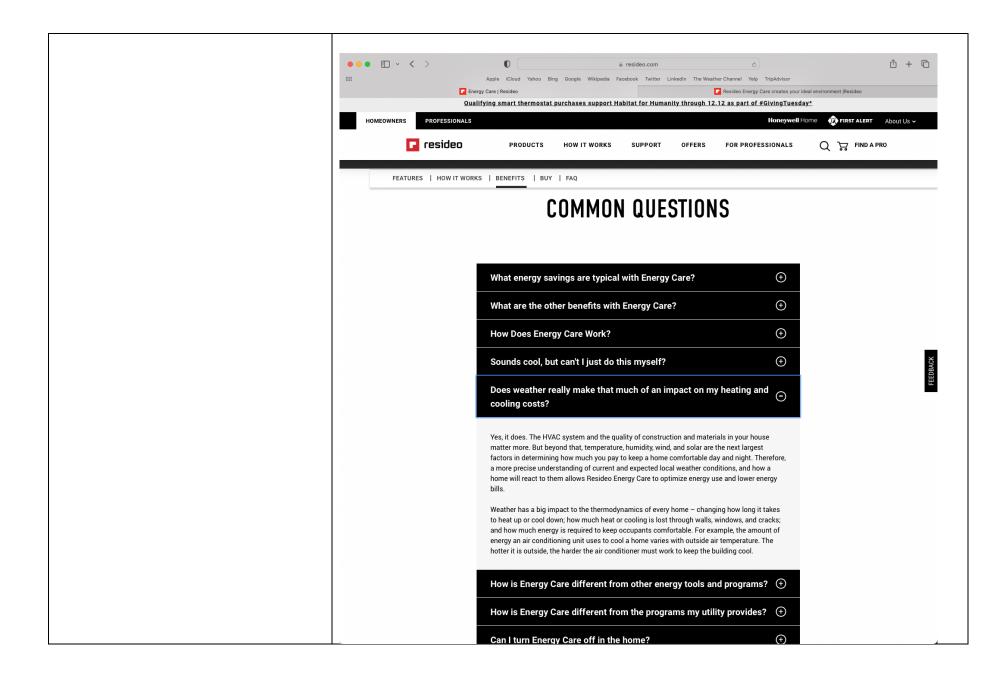


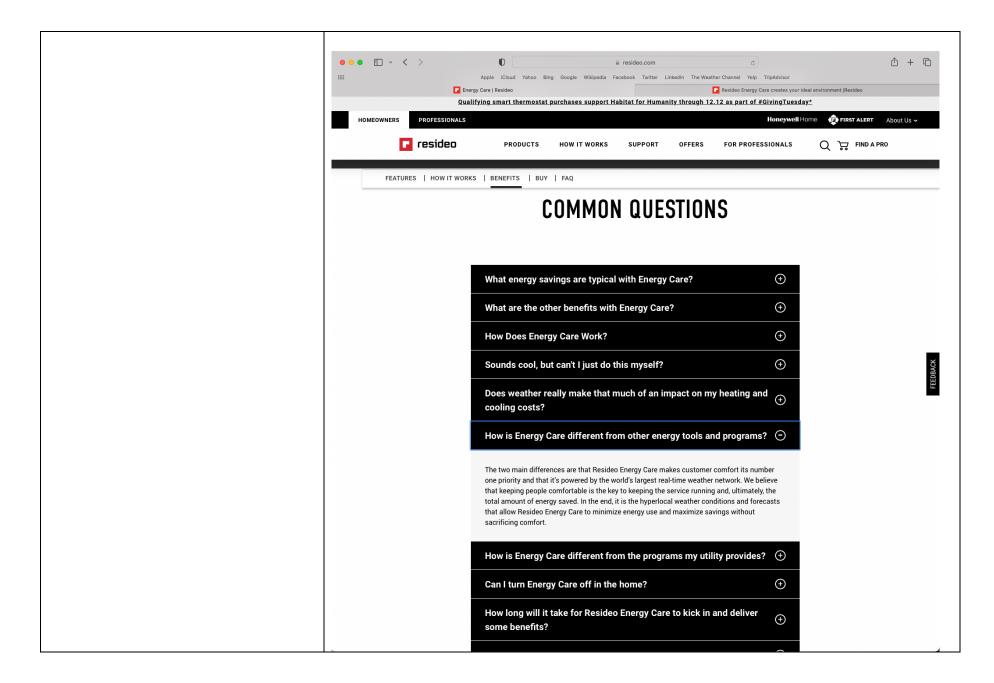


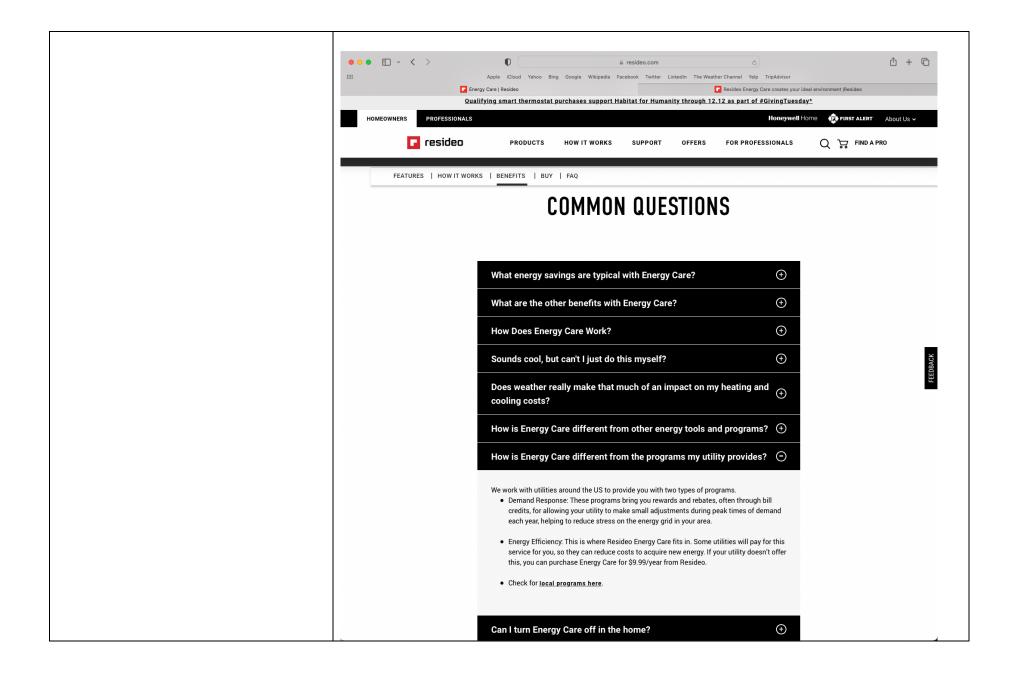












Claim 2

2. A system as in claim 1 in which said processors receive temperature of outside temperatures for geographic regions comprising ZIP codes from sources other than said HVAC system.

The Accused Products/Instrumentalities include said processors that receive temperature [measurement] of outside temperatures for geographic regions comprising ZIP codes from sources other than said HVAC system. For example, this corresponds to receiving the hyperlocal weather data with the Energy Care feature as described for claim 1[c] in the chart above.

Claim 3

3. A system as in claim 1 further comprising a programmable thermostat that communicates with said HVAC control system using the Internet.

The Accused Products/Instrumentalities can further comprise a programmable thermostat that communicates with said HVAC control system using the Internet. As only one example, where the HVAC control system corresponds to the Energy Care cloud servers alone, the accused system can additionally include the Resideo thermostat which communicates with the cloud servers using the Internet. This is described at length with respect to how the Energy Care feature works as described for claim 1[pre]-1[c] in the charts above.

Claim 4

4. A system as in claim 1 in which said processors communicate with said HVAC system using a network that includes an electricity meter.

The Accused Products/Instrumentalities processors (e.g., thermostat processor, or Energy Care cloud processor(s)) communicate with said HVAC system using a network that includes an electricity meter. For example, the Energy Care system establishes a network that can include an electricity meter for more accurate energy cost readings. See 1[pre] above for a description of Energy Care and its energy analysis capabilities.

Claim 5

5. A system as in claim 1 further comprising a programmable thermostat and said programmable thermostat is the sole source for current data regarding temperature inside said location conditioned by said HVAC system.

The Accused Products/Instrumentalities can further comprise a programmable thermostat that is the sole source for current data regarding inside temperature inside the location conditioned by the HVAC system. For example, the standard setup for Energy Care will be where the Resideo Thermostat is part of the claimed system and is the sole source of current inside temperature data used by Energy Care. This is described at length with respect to how the Energy Care feature works as described for claim 1[pre]-1[c] in the charts above.

See, e.g., www.resideo.com/us/en/energy-care/ (Energy Care "uses data from your connected thermostat and hyperlocal weather data to develop a custom energy model of the home to understand how each one responds to varying weather conditions. Using this model, Resideo Energy Care then sends optimized thermostat schedules to participating thermostats each day based on the forecasted weather, the thermal properties of the home, and a customer's selected comfort settings. The result is lower energy use and costs without sacrificing customer comfort." Further, Energy Care makes sure that "when the weather heats up, your home will cool down in time to keep you comfortable."); ("Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature...Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."); (Energy Care can not only use "integrals and heat transfer equations," "analyzing large volumes of data," to develop a "more precise understanding of current and expected local weather conditions, and how a home will react to them," not only to "optimize thermostat settings each day" but also "recalculates settings on-the-fly"); (Energy Care calculates "how long it takes to heat up or cool down; how much heat or cooling is lost through walls, windows,

and cracks; and how much energy is required to keep occupants comfortable" based on and in response to the weather.)

Claim 6

6. A system as in claim 1 in which said temperature measurements inside said first location occur at only one physical location.

The Accused Products/Instrumentalities can further comprise said temperature measurements inside said first location occur at only one physical location, e.g., the location where the thermostat is installed. For example, the standard setup for Energy Care will be where the Resideo Thermostat is part of the claimed system and is the sole source of current inside temperature data used by Energy Care, and the only physical location is where the thermostat is installed. This is described at length with respect to how the Energy Care feature works as described for claim 1[pre]-1[c] in the charts above.

See, e.g., www.resideo.com/us/en/energy-care/ (Energy Care "uses data from your connected thermostat and hyperlocal weather data to develop a custom energy model of the home to understand how each one responds to varying weather conditions. Using this model, Resideo Energy Care then sends optimized thermostat schedules to participating thermostats each day based on the forecasted weather, the thermal properties of the home, and a customer's selected comfort settings. The result is lower energy use and costs without sacrificing customer comfort." Further, Energy Care makes sure that "when the weather heats up, your home will cool down in time to keep you comfortable."); ("Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature...Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."); (Energy Care can not only use "integrals and heat transfer equations," "analyzing large volumes of data," to develop a "more precise understanding of current and expected local

weather conditions, and how a home will react to them," not only to "optimize thermostat settings each day" but also "recalculates settings on-the-fly"); (Energy Care calculates "how long it takes to heat up or cool down; how much heat or cooling is lost through walls, windows, and cracks; and how much energy is required to keep occupants comfortable" based on and in response to the weather.)

Claim 7

7. A system as in claim 1 in which the status of said HVAC system includes whether said system is "on" or "off.".

The Accused Products/Instrumentalities further satisfy where the status of the HVAC system includes whether said system is "on" or "off." This is described at length with respect to how the Energy Care feature works as described for claim 1[pre]-1[c] in the charts above. The status of the HVAC system includes whether it is "on" (e.g., heating or cooling) or "off" (e.g., not heating or cooling") and this is used by the Energy Care feature for the energy modeling.

See, e.g., www.resideo.com/us/en/energy-care/ (Energy Care "uses data from your connected thermostat and hyperlocal weather data to develop a custom energy model of the home to understand how each one responds to varying weather conditions. Using this model, Resideo Energy Care then sends optimized thermostat schedules to participating thermostats each day based on the forecasted weather, the thermal properties of the home, and a customer's selected comfort settings. The result is lower energy use and costs without sacrificing customer comfort." Further, Energy Care makes sure that "when the weather heats up, your home will cool down in time to keep you comfortable."); ("Thanks to Home Thermodynamic technology, Energy Care can learn details about the building you live in, such as insulation levels and how susceptible your home is to solar radiation and uses them to adapt your environment to the right temperature...Energy Care works with your thermostat to understand daily temperatures and behavior in your home. It also allows you to input your preference between saving money and changing comfort levels. As a result, you'll know what to expect each time you walk through the door...when combined with our state-of-the-art AI algorithms, your energy use becomes more efficient than ever. In fact, you're likely to notice the impact of subscribing to Energy Care quickly."); (Energy Care can not only use "integrals and heat transfer equations," "analyzing

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large volumes of data," to develop a "more precise understanding of current and expected local weather conditions, and how a home will react to them," not only to "optimize thermostat settings each day" but also "recalculates settings on-the-fly"); (Energy Care calculates "how long it takes to heat up or cool down; how much heat or cooling is lost through walls, windows, and cracks; and how much energy is required to keep occupants comfortable" based on and in response to the weather.)
